THE BUILDER

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The Town Planning Conference.

THE Conference which has been sitting at the Westminster Palace Hotel for two days this week, to consider the subject of Town Planning in special relation to the powers and opportunities created by the new Act, took for the basis of its discussion a series of papers on the subject which were not read, but were placed, as far as possible, in the hands of those who attended the meeting or were interested in its subject.

In looking through some of these papers, it becomes apparent that the motive which is at the bottom of most of them is mainly hygienic and philanthropic; and no doubt the Housing and Town Planning Act itself may be considered to be to a great extent a philanthropic measure, calculated to promote the greatest good of the greatest number. This is not the only possible aspect of Town Planning, the other and we should almost be inclined to say the higher object of which is to get rid of ugliness and to produce beauty in towns. In fact, the laying out of towns so as to produce beautiful and stately effect almost inevitably brings in its train a better hygienic condition, in the regard necessarily shown for open spaces and a limiting of the height of buildings in comparison with the width of streets; while the consideration of hygienic conditions does not necessarily carry with it much attention to architectural beauty. Houses may be very healthy, physically, and yet very ugly and uninviting; we say physically, because ugliness in our dwellings and habitual surroundings may have a certain prejudicial effect on health, as inducing a less happy state of mind; but the connexion with physical health is perhaps rather indirect, and certainly would not affect all persons in the same degree.

Another point that strikes us in some of the papers before us, which were supposed to form the basis of the Conference, is the very decided condemnation in them of the tenement house on a large scale; not only as regards health and happiness for the inmates, but in the point of view also of economy, which is supposed by many to be one of their chief merits. This is very strongly put by Mr. T. C. Horsfall in his excellent paper, in speaking of the dearness of building land for the houses of the poorer classes in connexion with German cities. He lays it down that "there is only one real cause for dearness of land in towns, viz., excessive use"; and goes on to say that "it is because the 1 acre of land provides habitations for a much larger number of persons in German towns than in English towns that land is so much dearer there than here. The average number of inhabitants per acre is in Berlin about 180, and in London about 62." In other words, the economy in building supposed to be provided by housing the poorer class in lofty tenement structures—unattractive, unhomelike, and in one sense at least unwholesome, in that they stop out a great deal of sun and air in proportion to the space around them—is obliterated by the fact that the existence of these structures raises the cost of the land on which they are or are to be built. And if the plea of economy is removed from the tenement house—what used to be called the "model dwellings" type—what else is there to be said in its favour?

We gather that Professor Valendas, of Munich, is of the same opinion, though he does not state it in quite so positive a wording. He says that town planning and enlargement "should in the first place provide the greater part of the population with good, cheap, healthy, and modest artistic dwellings"; phrases which certainly do not characterise the tenement house. He thus describes the essential difference between the ancient and the modern town: in Prussia, he observes, 90 per cent. of the town population are obliged to live in small dwellings of one, two or three rooms. "The ancient towns, often several times enlarged, gave 'room to live' to their population. That is one of the reasons of their artistic character [a very significant remark which is worth noting]. Modern towns are continually enlarged, but nevertheless great part of their population have not room to live. This is one of the reasons of the inartistic expression of modern towns." Further on, contrasting the conditions of the ancient and modern town, Professor Valendas says:—

"In the ancient town the property-holding citizens were in the ascendant, whether they had a worldly or ecclesiastical lord, or made their own laws, as was the case in the numerous free imperial towns of Germany. In the modern town the element which owns nothing is the greatest. It forms the most important support for productive labour in the main. This predominance of the propertyless element has brought with it an entire change, not only in the requirements of dwellings, but also in the whole character of the towns. In the economic small industry which five decades ago was predominant in Germany and which in small towns is still important, the dwellings, the workshop, and also the shop were so combined that the workman in most cases not only worked at his trade in his master's house, but also lived there and belonged in a certain sense to the family.

When in the course of the development of factory work the small industry was forced aside, a separation of the dwelling and the workshop naturally took place. The latter was removed from the existing residence. The immediate demolition of the old does not indicate the beginning of the contrast between the new and the old, but an increasing settlement of new elements on the periphery. The results of this crystallisation caused little by little breaks in the old conditions. The result

of this transfer of the workshops was the building of large quarters, that are occupied exclusively by the working population. How these workmen's quarters developed in the beginning it is not necessary for me to describe more particularly. Before their existence the expression 'overcrowding' was unknown. This word alone indicates the lowest point in civilisation of a whole period which is to-day not yet ended."

On a further page the author remarks on the excellent example set by the Corporation of Ulm, who acquired the ground occupied by the ancient and now useless fortifications, and on the land, when cleared of these, planned cheap sites for workmen's dwellings, not (as in other cases in Germany) dwellings of the densely populated barrack type, but houses for two or three families. The barrack type appears, in short, to have had a specially large development in Germany, and to be recognised as a failure. And it must be remembered that overcrowding vertically is just as bad in its effects as overcrowding horizontally; an argument which applies to the buildings of the wealthy as well as to those of the poor. We are making this mistake over a great part of London at the present moment. Higher buildings require wider streets, not only for architectural but for hygienic reasons: and do not get them.

In regard to the artistic treatment of cities Professor Valendas makes also a good remark as to the importance of preserving a relation between the design of the town and the character of the site. The ancient towns, as he puts it, "are associated with the earth on which they stand." Of course the chance of designing the town in reference to the site, or of letting the character of the site suggest and govern that of the town, hardly occurs now, except in regard to extensive new suburbs, or to what have gained the name of "Garden Cities"; but this relation between town and site is no doubt, as he suggests, one reason of the impression of beauty given by many ancient towns. And where there is the chance of thus designing the architecture of a new suburb with an æsthetic relation to the site, it must not be forgotten that this is essentially an operation calling for the mind, and the best mind, of the architect. In a report of a meeting on another page of this issue we see that the claim has already been advanced that this kind of work is essentially a surveyor's business. That is just what it is not; it is an important architectural problem which requires the mind and training of the architectural artist; and this is perhaps even more the case in architectural and street alterations in existing large towns. We have specimens of what may be called surveyor's planning in the treatment of the Constitution Hill arch and the open space opposite to it, and a still worse instance in the case of the recent manipulation of the surroundings of the Marble Arch; two of the greatest mistakes that have been made in what are called "London improvements"; entirely for want of a competent architectural mind to direct the operations.

The practical results of the Conference may be summed up in two resolutions which were passed, after a good deal of discussion. The first, at Tuesday's meeting, was to the effect that in connexion with questions of improvement in any town, a "Town Planning Committee" should be appointed by the local authority, with the suggestion that a limited number of persons specially qualified might be asked by the local authority to give advice on any scheme proposed. It was also agreed that a clear statement of the objects to be aimed at should be drawn up, and that this statement should include the provision of parks and open spaces and the preservation of all places of beauty and of historic interest. All this is in the right spirit; and the provision of open spaces, opportunities for recreation and for preserving air space (apart from the larger question of parks) is of the greatest importance to town life; the evidence in regard to this point given in Mr. T. C. Horsfall's paper is especially clear.

At the second day's meeting much was said in favour of the importance of individuals and societies who had an enlightened interest in the subject coming forward and giving their support to a Local Authority wishing to carry out an improvement scheme. This is very important, because there is no doubt that for the first few years the application of the Act will meet with strong opposition from those who have private interests which they may think will be affected by an improvement scheme. The Act initiates in many respects a new state of things, and its very novelty will lead to opposition at first, until people have become used to it and learned to accept it as the established order of things. At the same meeting the following resolution, proposed by Mr. Beard (Town Clerk of Blackburn), was passed:—

"That the attention of the Local Government Board be called to the urgent need for at once devising some simple procedure and effective provisions for protecting the community against the passing of street and building plans for the immediate development of areas on unsatisfactory lines before the town plan is made."

Arrangements were subsequently made for the formation of a Town Planning Advisory Committee, which it was hoped would be of service in answering questions and publishing papers and plans in connexion with Town Planning schemes.

Considering the national importance of the subject, and the interest which has been awakened by the new Act and all that it may mean, it is remarkable how little space and attention has been accorded to the Conference by the daily papers. We presume they consider that the public are indifferent to it. If so, the public must be, and probably will be in time, awakened as to the importance of the subject.

THE CHRISTMAS HOLIDAYS.—Next week the *Builder* will be published on Thursday, the 23rd inst., and to ensure attention all communications for the Editor must reach our office not later than by first post on Wednesday morning.

POST OFFICE, NEW ZEALAND.—H.M. Trade Commissioner for New Zealand (Mr. G. H. F. Rolleston) reports that a contract has been made with a Wellington firm for the construction of a post office at that town, at a cost of about 100,000*l*. The name of the firm who have obtained the contract may be obtained by British firms interested, on application at the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall-street, London, E.C.—*Board of Trade Journal.*

STUDENTS' DESIGNS AT THE ROYAL ACADEMY.

THE annual exhibition of work by students of the Royal Academy is of more importance than would attach to it if considered as an ordinary exhibition of works of art. It is the testimony as to the results of the training in our principal teaching centre of art, and it is sometimes the occasion of bringing to light talents in design which will probably enable their possessor to take a conspicuous place in the future annals of English art.

Mr. Harry H. Jewell, who has obtained both the Gold Medal and Travelling Studentship in Architecture and the 25*l*. prize for a "Design in Architecture," ought, if he makes the best of this start, to fill a high place in the profession some day. In regard to exterior architectural treatment his elevations for the 25*l*. prize are superior to those shown in the more important competition for the Gold Medal; both are classic architecture, but the Gold Medal design, for "A Nobleman's Mansion in a large Park, with Garden Terraces down to the River," is in its exterior treatment of a rather tame and scholastic type; the 25*l*. design shows a much more vigorous treatment. This defect in the Gold Medal design is however of minor importance, for the real merit in the design consists in the fine treatment of the plan and in the grasp of the whole as an architectural conception. The house has a grand front courtyard entered between two blocks of outbuildings and flanked within by a semicircular arcade on each hand (somewhat on the plan of Bernini's forecourt to St. Peter's). In the plan of the house itself there is a great deal of scope for interior effect; the whole is symmetrically and axially laid out, and a very good point in it is the group at one end of a set of rooms more especially belonging to ladies (boudoir, small drawing-room, etc.), while at the other end, in a similar position, are the smoking-room, library, and study; a "ladies' stair" being connected with the first-named group and a "gentleman's stair" with the other one; an arrangement very suitable in a mansion of the first order. The only mistake in the plan (æsthetically) is that, just as Vanbrugh at Blenheim made the chapel and the kitchen balance each other in the design, so the author here has made the chapel and billiard-room balance each other, as two similar circular apartments in corresponding situations on opposite sides of the plan. This is hardly suitable. The fact is that a chapel, as a sacred apartment in or in connexion with a building the rest of which is for secular purposes, ought to have a special position and treatment; it cannot balance with anything else. The plan of the gardens is as fine and dignified as that of the house.

Looking over the other designs in the same competition, it is interesting to note that in nearly all of them the conception of the plan is the best element in the design; there is no architecture that we care much for, but several of the plans are good; a fact to be noted, because it implies that plan is receiving more attention in the Architectural School

of the Academy than it formerly did. In No. 148 the front block, with its suite of reception-rooms in the rear of a colonnade and its large flight of exterior steps up to the entrance, is very dignified, although in the perspective view it is evident that the flight of steps requires connecting with something in the laying out of the ground, instead of being left to form a kind of naked headland jutting out alone. External steps are thought inconvenient, in these degenerate days; but there is no such fine and stately method of access to a large house.

The 25*l.* designs need not detain us much; among the designs for a Campo Santo the one with Doric order (167) was the best; the design No. 179 for a mausoleum merited notice as a simple and effective treatment of a small domed structure on a Greek cross plan; and No. 161 showed a good elevation for a railway terminus façade designed under manifestly French influence. Another railway station design, in which the clock erection looks like a magnified timepiece off a drawing-room chimney-piece, is an instance of that deficient perception of the quality of scale which is so often a stumbling-block with young designers; we meet it again in the prize design for the "Set of Drawings" (15*l.*) by Mr. J. G. Cooper, in which the pierced decoration of the doors in the ground story is quite out of scale, and gives the impression of a much smaller structure than was intended; in other respects this is a clever design, showing some fancy and invention. Among the other designs in this set one for a Golf Club House (No. 195) is pleasing and suitable; and a design for "An Arched Gateway with a Pair of Lodges" (203) pleased us by its simplicity of treatment and a style rather apart from the stereotyped entrance lodge programme. The Perspective Drawing in Outline Medal is won by Mr. Weinberg with a very correct and cleanly executed drawing of the Strand entrance to Somerset House; a difficult piece of work, with its assemblage of arch-curves.

Sculpture, as usual, shows the finest work of the year. The Gold Medal is awarded for a basrelief treatment of "The Expulsion from Paradise," gained by Mr. Alfred Buxton for a work which, in its beauty of composition and expression, seems the production of a finished artist rather than of a student in the usual sense of the term. Among the others, No. 130 showed a fine effect of consentaneous movement in the design and composition of the two figures. The subject for the small sculptural group was "Hercules Wrestling with Death for the Body of Alcestis." In most of these there is a want of really forcible action, but the prize design, by Mr. Wyon, is a fine and forcible group, and would work out very well into a life-size composition.

The "Design for the Decoration of a Public Building" forms the link between architecture and painting, and is one which we always regard with special interest. The subject this year, "A Hunting Scene, Classical or Mediæval," is one that allows plenty of liberty of treatment in regard both to composition and colour. The tendency with all the competitors has been to crowd their figures too much and thus rather lose sight of decorative arrangement of line; but the design of Miss Bentwich, which gained the prize, is very good in colour, and the life-size cartoon of one figure is admirable in pose and drawing. The Creswick Prize landscapes are, we think, better than usual, and there is no doubt that this year the prize has been rightly awarded to the painting by Miss Kennedy, whose picture is full of light and colour, and entirely avoids those crude tones which seem the difficulty with young landscape-painters in oils. Among others which had decided merit were Nos. 18, 24, and 29. For the Turner Gold Medal ("Fishing boats Making for Safety in a Gale") there were few competitors, and only one worth counting, Mr. T. Lucas, to whom the Medal has been awarded; his painting of rough sea and shipping is very true and spirited, and gives promise for the future.

It is perhaps a proof of the great difficulty of oil painting dealing with important figure subjects, that the works painted in competition for the Historical Painting prize are usually the least successful of the year. To master all the difficulties incident to this elaborate form of art seems as much as can be done by a beginner; and though the prize picture, by Miss Robilliard (this is quite a ladies' year) is undoubtedly the best, yet one feels that, as a picture, it could only pass as a mediocre one in any fairly representative exhibition. This is what we always felt in regard to the Historical Picture competition; it is only a matured and long-practised talent that can handle such an art with mastery and a certainty of a success beyond mere manipulation. Whether figure-painting in oil is the greatest of the arts of design may be a question; but we feel no doubt that it is the most difficult, with a difficulty totally beyond what the average picture-gazing public, with their easy-going praise and blame, ever realise.

NOTES.

Professor Hamlin's Lecture. THE paper by the distinguished American visitor, Professor Hamlin, on Architectural Education in America, read at the Institute on Monday, was a little too long, but was full of interest, and gave a remarkable historical survey of the state of architecture in the United States, from the early days of the naïve and unconscious charm of the "Old Colonial" classic, through the dark days during and following the Civil War, when art was practically dead, down to the present-day systematic and highly organised architectural education which, whatever questions it opens for discussion, is so highly to the credit of the country. The description of art in the war period reminded one of that scene in "The Wrecker," where the American pupil tells his French teacher in the Paris atelier that his sculpture group is a commission for the decoration of a Hôtel de Ville. "Ah!" said the French artist, "qu'est-ce que vous me chantez là?" But on explanation, said "Ah! en Amérique—veery good, veery good." But we thought the best part of all Professor Hamlin's utterances was his really eloquent little speech at the close of the meeting, deprecating the idea that America was to make a new architecture of her own: Were they not, he said, like the English, the direct inheritors of Shakspeare and of English mediæval architecture? Why should they be asked to create a new style, any more than England? There is some truth in that. Nevertheless we think there is a little too much Ecole des Beaux-Arts in contemporary American architecture.

The Strozzi Palace, Florence. IT is gratifying to learn that the late Prince Piero Strozzi has bequeathed to the Italian State, or to the Minister of Public Instruction in that behalf, the Strozzi Palace, for its dedication to some fitting public purpose and maintenance as a national monument, subject to the payment of certain charges upon his estate amounting in all to about 56,000*l.* The palace was built by the eldest Filippo Strozzi, whose portrait, with those of several members of his house, the Prince has left to the communal administration of Florence. The Strozzi Palace, which is almost a twin building, architecturally, with the Riccardi Palace, is one of the most remarkable examples of the stately and severely designed private palaces of the early Renaissance, in which, as Fergusson puts it, the wall takes the place of the columnar order, and the cornice is proportioned to the whole height of the building, and not to an order occupying a portion of the height. The Strozzi cornice is one of the boldest features in Italian Renaissance architecture, projecting nearly 10 ft. from the wall surface; a far greater projection than its bed on the wall, which gives rather an unsatisfactory and even alarming appearance in a section of the building. It must, of course, have been tied down in some way, which is not very truthful building; but its grand effect may be held to atone for that. It is satisfactory to think that this grand building is now preserved from possible demolition and become a public monument. Had it stood in London, it would probably by this time have been pulled down in order to build a block of "Flats" on the site.

Waterloo Bridge Foundations. AN early evidence of activity on the part of the Port of London Authority has been given by the request to the County Council that some pile stumps should be removed from the position they had occupied for the last hundred years. In the opinion of the new Board these stumps were dangerous to navigation, but we certainly must say that the view is scarcely borne out by actual experience. The piles in question were probably some of those in the three concentric rows forming the cofferdams in which the piers were built under the direction of Sir John Rennie, and very properly left in position, after having been cut off as low as possible, to consolidate the soil beneath the river bed. The County Council have already dealt with the matter, we presume by cutting down the projecting stumps and leaving the buried portions in place so as to avoid any injurious effect on the stability

of the structure justly described by Canova as "the noblest bridge in the world." During the operations it was discovered that some other pile stumps remain beneath the crown of the first river span on the Middlesex side. Possibly they were originally driven for support of the arch centring. The subject of their treatment is now under consideration by the Highways Committee, by whom a report will be issued if necessary. The shortening of these stumps would present no difficulty, but for the moment it does not appear that the Port Authority object to them.

The Assopus Viaduct.

IN addition to the Fades Viaduct, of which some particulars were given by us in October last, French engineers are to be credited with the boldly-designed steel bridge for the new railway from Pirœus to the Turkish frontier. This structure is about 700 ft. long, and spans a ravine some 600 ft. from side to side, and more than 325 ft. deep at the lowest point. Emerging from a tunnel at either side, railway trains will traverse either one or four girder spans according to direction, and then pass over an arch of 262 ft. span with the rise of 78 ft., this arch being of the three-hinged type. The five girder spans, each 86 ft. long, are supported on lofty masonry piers. The whole of the steel work was prepared in the yard of the contracting firm in Paris, and transported thence by rail. Considering the exceptional facilities possessed by some of our North-east Coast and Scottish firms for the economical production and shipment of structural steel work, it seems a little strange that an inland French company should be able to secure the work. Of course there may be special reasons for this, but in any event it is well that British industrial concerns should recognise the enterprise and marked ability of their friendly rivals in France.

Waterproofing.

A PAPER read on this important topic by Mr. Myron H. Lewis before the Municipal Engineers of New York is now issued in pamphlet form. The author limits attention to those branches of work, defined by him as "waterproofing engineering," which relate particularly to means of protecting structures against injury by water and the occupants of structures from discomfort due to the penetration of water. He considers not only methods of treating various substructural conditions, but also the treatment of concrete so as to make it impermeable. He discusses the treatment of the materials and that of the structures in which they are employed before and after erection, above or below ground, and in water. Mr. Lewis is quite right in saying that defective waterproofing is almost worse than none. He is an advocate of the axiom that the best is the cheapest, and in addition to theoretical consideration he goes thoroughly into practical details in a manner which we are sure will be appreciated by our readers. The value of the paper is enhanced by various specifications for waterproofing work, including those adopted for the New York Rapid Transit Subway. the Long Island Railroad Tunnel, and concrete bridges on the Chicago and North-Western Railway.

Modern Cement Works.

IN a paper read to the Junior Institution of Engineers this week, Mr. Harry Horsburgh, A.M.Inst.C.E., discusses "The Design and Running of Modern Cement Works," tracing progress in methods of manufacture from the days of Joseph Aspdin to the present time. The rotary kiln, originated in England, first employed in the United States, and reimported like many other British inventions as an American novelty, has also revolutionised the manufacture of Portland cement. The longest kiln of this type in England is one at the works of Messrs. Forder at Sundon, Bedfordshire, its dimensions being 150 ft. long by 7 ft. 6 in. diameter, and its capacity 700 tons per week. Thanks to the rotary kiln, the cost of production has been reduced very materially, the actual works cost, as stated by the author, being from 11s. to 12s. per ton. A certain amount of prejudice exists with regard to "rotary cement," but we see no reason why this product should not be fully equal, or even superior, to that from the old-fashioned kiln. Although not of great length, the paper is one deserving perusal by all who make use of Portland cement in architectural and engineering construction.

Contractors' Plant for the East River Tunnels.

RARELY has there been a more complete account of contractors' plant for an important engineering work than that embodied in the paper read this week before the American Society of Civil Engineers. The author, Mr. Henry Japp, M.Am.Soc.C.E., occupies some seventy-five pages in the *Proceedings* of the Society, with a fully detailed description of the machinery and appliances used by the contractors who built the East River tunnels of the Pennsylvania Railroad, giving particulars concerning the construction, installation, and operation of air-compressors, steam boilers, steam pipes, coal-handling apparatus, air pipes, hydraulic plant, fire service appliances, tunnelling shields, grouting plant, transport systems, caissons and air locks, pumps, stone crushers, concrete mixers, dredging plant, medical lock for treating caisson disease, workshop equipment, and other things too numerous for individual mention. The free and open way in which contractors' plant is discussed by American technical societies and journals deserves imitation on this side of the Atlantic, where engineering and building contractors are often needlessly secretive on the subject of the appliances used in the execution of important works.

BAPTIST SUNDAY-SCHOOL, SHEFFIELD. — The Baptists of Sheffield have erected Sunday-school premises at Portmahon. The cost of the scheme has been about 2,300*l*. The new building is of three stories, with classrooms 24 ft. by 16 ft. and 18 ft. by 12 ft. on each floor. The large schoolroom, 40 ft. by 30 ft., under the chapel, has been entirely remodelled. The architects were Messrs. H. L. Paterson and F. W. Chapman, both of Sheffield.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE usual fortnightly meeting of the Royal Institute of British Architects was held on Monday night at No. 9, Conduit-street, W., Mr. Ernest George (President) in the chair.

Mr. H. T. Hare, Hon. Secretary, announced with regret the decease of Mr. H. B. Garling, elected an Associate in 1843 and Fellow in 1857. He was awarded the Institute's Silver Medal in 1868 for his essay on "Sculpture and Sculptural Ornament." He won the Royal Academy Silver Medal for measured drawings and the Gold Medal for architectural design. In 1857 he won the first premium of 800*l*. for his design for the War Office, his design being selected from amongst 218 submitted.—Also Mr. T. Wm. Cutler, elected an Associate in 1873 and Fellow in 1878. He served on the Council for seven years until 1898, and took an active part in the affairs of the Institute as well as in those of the Royal Sanitary Institute.—Also Mr. Geo. Campbell Sherrin, elected an Associate in 1882 and a Fellow in 1898. Mr. Sherrin served for some years on the subcommittee of the Institute, but was never a member of the Council. His work would be known to many of them, but was not so widely known as it deserved to be. He was an earnest and sincere worker, and the buildings erected from his designs bore evidence of this. His loss would be a severe one not only to the Institute, but to the profession generally.

Architectural Education in America.

Professor A. D. F. Hamlin read a paper on this subject, of which the following is an extract:—

In America one most important circumstance impressed itself profoundly from the outset upon all their building operations. This was the necessary substitution of wood for the stone and brick in which they had been accustomed to work. In a forest-covered land, where every acre of tillage had to be won from the pines and oaks, construction in timber imposed itself as the only practicable and economical method of building. The habit of masonry construction disappeared for lack of opportunity for its exercise; and when, early in the XVIIIth century, the first beginnings of true architectural art appeared, it was the architecture of Queen Anne, and later of the early Georges, interpreted in wood, not stone and brick, by carpenters and cabinet-makers, not masons. In this Colonial American architecture the American builders developed a genuine style of their own, full of refinement and charm, and suited to the material chiefly employed. Trained professional architects, however, there were none. The first forty years of the XIXth century witnessed a considerable architectural activity, greatly influenced in the late 'twenties and even through the 'forties by the English-Greek Revival. The Civil War period—from 1850 to 1876—was the period of darkest night for American architecture. Political conflict wholly absorbed the energies of the American people. But with returning peace and increasing leisure, the amenities of the higher culture began to receive increasing attention. The return of peace in 1865 had been followed by a sudden industrial awakening, especially in mining and the development of railway building and manufactures in the west. This led to the establishment of numerous technical schools, following the lead of Columbia College which had even in the midst of the war established its school of mines in 1863. The great Massachusetts Institute of Technology was opened at Boston shortly after that date—he thought in 1866.

Five years later a similar department was established in the Cornell University at Ithaca, in the State of New York, in pursuance of the expressed wish of the broad-minded founder of that University, Ezra Cornell, that it should be an institution

"where anyone could study anything he wanted to study." This department was placed under the direction of an accomplished scholar, Charles Babcock. A year or two later the State Industrial University of Illinois at Champaign, in that State, followed the example of Cornell. Thus at the time when the Philadelphia Exhibition marked the close of the Civil War epoch and ushered in the American Renaissance, there were in the United States three well-established schools of architecture, and these were the only organised and publicly recognised means for obtaining a professional training in architecture. The British system of office pupilage, with a fee to remunerate the architect for his personal interest and attention to his pupils, never obtained any foothold in the United States. But as far back as 1859 or 1860, the late Richard M. Hunt, of New York, freshly returned from Paris, where he had distinguished himself in the Ecole and under Hector Lefuel had worked on the designs for the new Louvre, opened a private *atelier* or studio in connexion with his office, and received as pupils a number of young men who later became distinguished architects; among them William R. Ware and George B. Post. These pupils he inspired by his infectious and unquenchable enthusiasm, and became to them a true master, *patron*, teacher and friend, so that this modest little *atelier* might be called the first nursery of architectural training in America.

The first school of architecture was organised in Boston in 1866, as a department of a school of technology, was in part modelled upon the architectural section of the Ecole des Beaux-Arts in Paris. A school, with an organised curriculum, was a necessity because of the total absence of any regular and organised system of office apprenticeship. That it should be connected with a school of technology was but the logical consequence of two facts; first, that architecture requires, in common with engineering, a considerable amount of mathematical and purely scientific training, such as these schools were already providing, and that, indeed, on its purely structural side it is really a branch of civil engineering; and secondly, that there were no highly-developed schools of art prepared to supply any large part of the training required by the architect. Since then the Massachusetts Institute of Technology was already prepared to offer thorough courses in mathematics, mechanics, mechanical drawing, strength of materials, foundations, masonry and structural design, it seemed only necessary to add a professor who should teach the history of architecture and the theory of design, and one or two instructors in design and architectural drawing and rendering, to complete the necessary staff of instruction. As there was then no American pupil of the Ecole available, M. Eugène Létang was called to the new post, which he filled acceptably for wellnigh twenty years. The results justified the experiment: the Boston School acquired a high reputation which it had maintained ever since, in spite of the multiplication of large and well-equipped schools throughout the country. After the death of M. Létang there followed a period during which the school lost somewhat of its pre-eminence in the matter of design; but in 1892 or 1893 M. Despradelle was called from Paris to the chair of design, which he had ever since filled with conspicuous success, and from that date the M.I.T. School began to recover the lost ground.

The present organisation of the Columbia Course in Architecture recognised three classes of students. First, those who aspire to the highest achievement in the profession, and to that end seek for a broad foundation of liberal culture through non-architectural studies before taking up their strictly professional courses; secondly, those who, without this broader foundation, desire to pursue a systematic course of architectural study for three or four years and to receive a definite academic recognition of their attainment; and finally, young men, already more or less experienced as draftsmen in the profession, who desire to pursue special studies in architecture while unable to afford the time or expense of the complete curriculum.

The curriculum leading to the degree of Bachelor of Architecture comprised the following groups of studies: (*a*) Mathematics and Engineering, comprising Analytical Geometry, Plain Trigonometry, the Differential and Integral Calculus, Mechanics, Graphical Statics, and Architectural Engineering—a specialised course in strength of materials and the calculations for masonry, columns, beams, and trussed constructions, with specific problems to be worked out in full; (*b*) Architectural History, including a three years' course in the history of architecture and the history of ornament, with at least one year of readings in archæology and architectural history in French and German; (*c*) Office-work and specifications, comprising parallel courses in the materials and forms of building and in specifications, and a certain amount of certified work in architects' offices; (*d*) Drawing and modelling, exercises occupying from six to ten hours per week through the entire period of study, in architectural draughting, modelling in plasticine, and freehand drawing, from elementary cast-drawing to life-drawing from the nude, and including a considerable amount of training in architectural water-colours; (*e*) Graphics, comprising advanced shades and shadows, perspective, descriptive geometry, and stereotomy; and finally (*f*) Design considered as the crowning feature of the course, the end and aim to which all other branches pursued are contributory. This course comprised lectures on the theory of planning, composition, colour, and decoration, and a graded series of problems beginning early in the first year of study and extending to the end of the course, culminating in the graduating thesis—the design of a building upon a programme selected by the student, upon which he prepares a fairly complete set of scale working drawings and specifications, with strain-sheets, calculations, and structural details of a given part of the edifice.

In the school of architecture of Harvard University there was but one general university *atelier*, but the giving out of problems in design and the criticism of the work are successively assigned to different architects in active practice. Thus variety of ideas and personality in the instruction were insured, though the element of continuity was somewhat sacrificed, and there is no opportunity for the development of that emulation which results from the maintenance of three distinct *ateliers* as at Columbia. At the other schools the design is under a single professor with one or more assistants. At most of the other schools, moreover, the course is fixed at four years; while at Columbia it is of indeterminate duration, the student graduating when he has acquired the prescribed "points," so that the ambitious and highly capable man is not held to the pace of the average, nor the faithful but slow plodder made to feel disgrace at not completing his programme of work within a rigidly-fixed limit.

With regard to the tide Paris-wards of their architectural graduates, the brilliant reputation of the Paris school, the fifty years' tradition of its advantages for American students ever since the days of Hunt and Richardson, the influence of the Beaux-Arts Society and its competitions, and the glamour of the affixed title of Diplômé de l'Ecole des Beaux-Arts, all tended to draw Paris-wards the young American graduate who desired to visit the Old World or to acquire further discipline in design. But the Columbia University School sought to discountenance the waste of time and duplication of work already done, involved in acquiring the Paris Ecole *diplôme*. They had sought to persuade their young men that the best that Paris can offer could be acquired by the graduate of an American school in a year or eighteen months, without entering the Ecole itself; and that one year in Paris and one year of travel, half on classic soil and half in England and Germany—two years in all—were of more real educative value than three years spent in acquiring the French *diplôme*.

He could not close without a word as to the work of the Society of Beaux-Arts architects of America. It numbered now some two or three hundred members scattered through the Union, and its committee on education issued each year, according to a carefully prepared calendar, two classes of problems, each comprising seven or eight major problems and as many one-day sketches. The printed programmes for these are given out on a set day at a dozen or more centres in different cities, under a representative, in each place, of the Society, who gathers the sketches (the competitors retaining tracings of them) and sends them to the New York office. Anybody might compete; the majority of those availing themselves of the privilege being young draughtsmen in the offices, who worked upon the designs at night, in *ateliers* conducted by themselves under the direction of a patron or critic belonging to the Society. A select jury judges each set of designs, awarding medals and graded mentions, and the highest premiated designs are published in one or more periodicals.

A course of training in these competitions is not, of course, the equivalent of an architectural education, but it was of undoubtedly great value to those who pursue it.

Mr. T. G. Jackson said he understood that the system described by the author contemplated three classes of students. The first class, which he would call "A," went through a course which led to the diploma of architecture, and it embraced two years' course in general subjects unconnected with architecture. The second class, "B," had a course leading to a certificate, but with no degree, and it was confined to architecture only. The third class, "C," embraced general teaching for men already at work on architecture who wanted to improve themselves in their profession, and who got no certificate at all. It seemed to him that class "A" was based on a confusion of ideas. General culture and liberal education was one thing, but architectural training was another. The man who graduated in art in the usual way and afterwards proceeded to study architecture was intelligible enough, and it often happened that a man after leaving the University entered an architect's office and studied architecture with great advantage; but to treat study which qualified for a degree in the arts as part of the architectural curriculum seemed to him a confusion of ideas and a sort of intellectual muddle which mixed up two different subjects altogether, and he could not help thinking it was inspired by a motive of which they had had instances in this country, viz., an attempt to give a sort of adventitious distinction and dignity to the profession of architecture by investing it with a diploma, which was an entirely fictitious distinction. In class "B" the strictly architectural teaching was more thorough than in A, and the author said: "The curriculum is more exclusively professional than the other, but it is less extended, and both in the preparation required and in the studies prescribed partakes of less of the character of a liberal education." This meant that more time was given to real architectural teaching than in the first class. Then in the last class of all they had simple practice in architecture for the man who already knew something of it, and he would imagine it was an extremely useful class, if not the most useful class of all the three. He was the last person in the world to deny general culture, for, of course, the more

cultured a man was the greater was his intellectual pleasure and the greater his usefulness to mankind; but general culture would never make a man an artist. If they looked at the careers of the great painters and sculptors they would find that as a rule they had risen from the ranks, and in many cases it was the same with the great architects. When they came to the great masterpieces of mediæval art he imagined they were the works of men who would now be called illiterate. He did not mean to decry the advantages of culture, but that the influence of culture upon architecture and art in the individual artist was indirect and not direct, and in adopting a scheme of general culture as a necessity of the training for an architect they were doing nothing at all. For that reason he could not help feeling that there was just as much hope, if not more, from the two inferior classes which carried with them no University distinction or degree; and one might look for perhaps better architects from these classes than the first class. It also appeared to him that there was too much stress laid on mere technicalities. Mathematics might be useful to the architect, and under certain conditions he could understand that. If he might speak for himself, he confessed his mathematics did not go beyond the first four rules, and they were enough to enable one to calculate the weight one had to carry and the strength one had to provide for. And then there were humane people who had provided tables which he had always found sufficient for his purpose. There were so many things which an architect had to learn that it was impossible for him to become expert in them all, and an architect who was wise could send for an engineer when he began to consider heating and ventilating, and the same with electrical matters and the very difficult problems of drainage. They all felt with the author the difficult position of the architectural students in America in having no old buildings in their own country; but in the very circumstances there was a suggestion which one always hoped the Americans would take advantage of. Whilst they knew that all styles must be developed from preceding styles and old example, and that no art ever came into being itself fully equipped; while the arts of the old world had been so long studied in America; while they had produced so many good architects of originality, and they expected good work from their successors; yet it did occur to him it was time America shut the book on old European example and developed the good work which had already been done by their own sons in their own country, and not look everlastingly across the ocean for example.

Mr. Reginald Blomfield, A.R.A., having expressed the pleasure they all felt in seeing Mr. Jackson amongst them, said he was not entirely in sympathy with all his views. He did not think that historically Mr. Jackson was quite correct, because they had it on the authority of the Architectural Association play that Ictinus was a tremendous fellow, and, at any rate, when they came to a later date the architects of the Renaissance were men of reasonable culture, and some were highly educated men. With regard to the question of technical instruction and education, what it really came to was that there were two ways of looking at education. The older educationalists said that the whole object of education was to train the mind before coming to the special subject. What they had to consider was whether a technical study such as architecture was as good a method of training the mind as the traditional methods. He thought it was not the best system, and he would infinitely prefer to have in his office a young man who had gone through a school and college training in general subjects rather than one who had been overloaded with a very imperfect technical instruction. He was surprised that the American system did not lay more stress on draughtsmanship. He took it that the American system had in the main taken its inspiration from the Ecole des Beaux-Arts in Paris, although he was glad to hear it was being modified in certain practical directions. That school took its inspiration from Blondel, who laid down a perfectly organised course of instruction 150 years ago, and draughtsmanship was to a large extent the basis of the training. Some years ago an effort was made by some of them to reorganise architectural training in this country, and he thought they were a little misunderstood in regard to the importance of draughtsmanship. There was another point which did not apparently affect America, but which was of importance here. He meant that the practice of being articled to an architect was going out of fashion. When they struggled with their scheme to reorganise architectural training they hoped that young men would go through the technical drudgery necessary in the school, and then come fairly primed into an architect's office, and would be so far better qualified to learn in the office than if they came direct from the school or University. He regretted to say that intention had not been followed out entirely, and apprenticeship seemed to be going out of fashion.

Mr. J. W. Simpson, in proposing a vote of thanks to the author, said there was one point in the paper which he would try to answer. The author asked whether the creation of any school of architecture tended to help or to hinder the rational and free development of art. They could not leave such a question unanswered, because if they left it in doubt, and still more if they gave a reply in the negative, it would cut away from their feet the whole enthusiasm which inspired their efforts at education. A school of some sort or another was a necessity for the growth of art. All their art was founded on tradition, and from that tradition they could not get away. The difference between the nation without a school and the nation with a school was that one had learned its position easily by direct means from the teaching of men of greater experience, whilst the other had to find it out for themselves and learned the traditions imperfectly. A tradition there must be, and the simplest way to carry on the tradition was to have a school. Under their new Charter they had set up a Central Board, and he hoped on that Board they would have the strongest and best men in the country to take over the whole question of education and direct and guide it as far as they could.

Professor C. H. Reilly (Liverpool University) seconded the motion, and said he had a whole-hearted admiration for the great American schools, for the courses at Liverpool were designed very much on the same lines. He had visited the Columbia University and other great schools in America, and came back impressed with the magnitude of the work they were doing. The great feature was the general monumental character of their architecture and the refinement of detail. Although America had had distinguished architects, they were engaged in such vast practices that it was impossible for them to give the individual attention which was necessary, and this refinement must be due to the assistants; and the high training of these assistants was due to the growth during the last ten or twenty years of these large schools of architecture with their extraordinary equipment. In these schools they had a definite aim. They set themselves to teach monumental architecture based on the great classical traditions, and they did not meddle with Elizabethan and Jacobean and other styles. By concentrating their efforts on this groove they reached a quickness and facility of design and a comprehension of the massing of a building which students here lacked. They learned to handle a great problem with a certain amount of conviction and power which otherwise it took years of contact with actual buildings to acquire. It was due to this teaching that a great monumental architecture was being built up in America which he thought they would come to realise was the national American style.

Mr. H. H. Statham said that reference was made by the author to the old colonial style of timbered houses, and he afterwards expressed the hope that the influence of material would be more felt than at present. He (the speaker) thought these colonial buildings gave a beautiful instance of the influence of material, for there they saw the classical style transformed by the influence of timber; they saw the colonnades with the influence of the classic style about them, but the details changed in consequence of being worked in this material. He had felt for a long time that there was far too much of the Ecole des Beaux-Arts in American architecture, and was glad to hear the author say there was going to be a reaction. He had been in the habit of going to the Paris Salon every year to look at the architectural exhibits, and had found it a monotonous business. They were all very good, and it always seemed to him that he saw the same every year. They lacked individuality. With reference to the remark made by Mr. Jackson about going to specialists, when it came to the details of electricity and drainage and so on, these things were of course too complicated for one man to know them all. He did think, however, the architect should know enough of the principles of them all to say whether the one adopted was the right one or not. There was a case where an architect said he did not know anything about certain construction and went to a person strongly recommended to him. The man made a blunder, and the building came down, and he did not think the architect should be exonerated in such a case. The architect should know the principles underlying these special branches, even although he was unable to work out the details.

Professor F. M. Simpson said he would not like the author to leave feeling that everyone agreed with Mr. Blomfield and Mr. Jackson about general culture and general education. To his mind it was the portion of the curriculum of Columbia University which was of the greatest value. It was in that one particular essential that it differed from the other Universities of America, and Columbia had shown its wisdom and good sense in taking the lead and insisting that all students who were going to take its degree should in the first place go through a special two years' course of general education and culture. He confessed to be unable to follow Mr. Blomfield when he said he preferred a man in his office who was not partially trained. A man who had gone through this two years' course was in one sense partially trained, but surely he was much better trained than the man who had not gone through any course at all? That seemed to him to be the important point. Education was better understood in America than in any country except Germany, and he fully agreed with Professor Hamlin as to every point in the curriculum being necessary for the architectural student.

The motion having been carried,

Professor Hamlin said the points raised had been discussed for the last twenty years in the United States. It was the great question of general culture and professional education and the relation they should bear to each other. He did not think at Columbia the question of general culture and professional education had been confused or muddled because the two years of liberal education required was a pre-requisite before beginning the professional education. The two years of general training were only required of those who wished to take the degree of Bachelor of Arts or Bachelor of Architecture. They recognised that general culture would never make an artist, but they believed that the man who had artistic fire in him would make a better artist and display a more advanced

and cultivated taste if his artistic training was based upon a foundation. There was this to be said with regard to mathematics and American practice. In New York, where the majority of their graduates found their careers, questions depending upon mathematics had assumed an importance which perhaps they attained nowhere else, because, with the development of steel frame construction, the erection of tall edifices and problems of wind pressure, the new forms of concrete construction, and so on, engineering problems had come up which the architect had most to solve. It was to these men with the mathematical course—the diploma men rather than the certificate men—that they looked for a solution of these problems ultimately. There was a good deal of misconception amongst their friends of the Old World, and especially their French friends, as to the matter of architectural precedent. Shakespeare and Queen Anne belonged just as much to America as England, and the precedents of mediæval history were the same. Until the colonies became independent of Great Britain the old tradition of Great Britain was theirs. They had inherited the spirit and traditions of the English people, and they could no more ignore that in their architectural training and design than they could ignore it in the language they spoke from day to day. That was why they studied architectural history, and why they could no more produce architecture without regard to the architecture of the past than the English could without regard to the architecture of the Middle Ages and the Antique. No such architecture could be created.

The President announced that the next meeting would be held on January 3, when an election of members would take place, and matters referred to in the motions brought forward at the last meeting by Mr. W. Woodward would be discussed by Mr. G. E. Nield, Fellow.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary fortnightly meeting of the Architectural Association was held on Friday last week, at No. 18, Tufton-street, Westminster, S.W., Mr. C. Wontner Smith, Vice-President, in the chair, in the absence of the President, Mr. Henry Tanner.

The minutes of the last meeting were read and confirmed, and Mr. Maurice Webb, Hon. Secretary, made the following announcements:—

A meeting of the Debating Society on December 17, at 7 p.m. Paper by Mr. Raymond Unwin, entitled, "That the Planning of Towns and Estates Should be Designed by an Architect, Assisted by a Surveyor." (Joint meeting with the junior members of the Surveyors' Institution.)

A meeting of the Camera and Sketching Club on December 16, at 7.30 p.m. Paper by Mr. Paul Waterhouse, entitled, "Draughtsmen's Dreams."

The Life Class (under Professor E. Constable Alston) commences on Wednesday, January 5, at 6.30 p.m.

The lectures by Mr. Edward S. Prior on "European Mediæval Architecture" will commence on Wednesday, January 12, at 6 p.m.

The Chairman then announced the reinstatement of Mr. C. R. Newborn as a member.

He also proposed a vote of condolence to the widow and family of the late Mr. G. Sherrin. He said that Mr. Sherrin was an old and valued member of the Association, having been associated with them for nearly forty years, and during that time he was a staunch supporter of the Association. He was well known personally to many of them, and particularly to those who took part in the Excursions.

The motion was agreed to in silence.

The Chairman announced that the competitive designs for a "Façade for the Royal Institute of British Architects' Premises at 9, Conduit-street," arranged by the *Builder*, will be on view at 18, Tufton-street, from Monday, December 20, to Friday, December 24, from 10 to 4.

Varallo, Orta, and Varese.

Mr. F. C. Eden then read the following paper, entitled, "Varallo, Orta, and Varese."

"I propose to bring before you this evening a series of small and hitherto almost unnoticed buildings, the work of obscure or unknown architects, and will ask you to accompany me to a part of Italy which is not famous for any achievement in great architecture, but where the stones cry to us in the vernacular of a district that lay somewhat apart from the main trend of contemporary thought. Varallo indeed speaks but the rude patois of a sequestered valley. By the lake of Orta we may listen to a strain of true lyric grace, while Varese tells its story in unmistakable prose, a little turgid and artificial as befitted the times, but not without interest.

If you draw a line across the map of Italy westwards from the town of Como, twenty miles will bring it to Varese, situate among the low foothills just where the mountains fade away into the great Lombardy plain. Thirty miles further on, after crossing the lower arm of Lago Maggiore it will pass through the town and lake of Orta, and at a point some 60 miles from its starting-place Varallo is reached, in the deep and wooded valley of the Sesia, a river which rises among the glaciers on the western flanks of Monte Rosa. The connecting-link between these three places is that each possesses a noted sanctuary in its Sacro Monte, or Holy Hill, and it is more particularly of these sanctuaries and the buildings which they comprise of which I propose to speak.

Imagine a grassy and undulating slope on a wooded hill, dotted with chapel-like buildings that gleam among the tree trunks, or stand out white against the sky, imparting a character of architectural romance to the whole mountain-side. Provide them with porticoes under which are grated view openings to the interior, vary the plan, size and design as fancy directs, and you have the general appearance of a Sacro Monte.

Varallo.

Let us begin with the Sacro Monte of Varallo, that being, so far as I am aware, the first thing of the kind to be attempted. Its inception was due to a Franciscan friar, Bernardino Caimi, of noble Milanese family, who had been appointed Commissary of the Holy Places in Palestine by Sixtus IV. He returned home in the year 1481, and partly in grief at the neglected condition in which he found the sacred sites, partly with the wish to edify those of his countrymen who had not the opportunity of travel, determined to found a New Jerusalem in his native Lombardy, to contain, as its central object of pilgrimage, a replica of the Holy Sepulchre. Careful search among possible sites indicated the hill that overhangs Varallo as the most convenient for his purpose; and the foundation-stone of the Holy Sepulchre Chapel was laid in the year 1491.

Caimi started with the idea of reproducing the Holy Sepulchre, and probably certain other holy places, as Golgotha and the Grotto of the Nativity. But as the work proceeded the idea developed into commemorating the events of the Sacred Narrative by groups of life-sized figures, so that there are now forty-four chapels upon the Sacro Monte. We call these little buildings chapels for want of a better word, but they are not built or fitted for religious functions of any kind, but solely to shelter these groups of painted imagery which form in conjunction with their frescoed backgrounds tableaux of the Redemption story. In the earliest examples the figures are of wood, the latest are of stucco, but those of the best period are of terra-cotta. All are painted—nearly all, alas, repainted!—by the nearest house-painter or professor, which comes to pretty much the same thing, with rouged cheeks and staring eyes. For canopies, hangings, and so forth real drapery is introduced, and the figures have wigs of hair or dyed flax. There is no shirking realism so far as it may be had.

The first sight of these groups is certainly something of a shock. There is a sense of theatrical convention, of self-defeating realism; of the lifelessness that comes from arrested movement, as of a stage full of paralysed marionettes. This is the first impression. But if we complain of staginess, we must bear in mind that this is an attempt to put a scene upon a stage. It is a perpetual miracle play, a mediæval mystery without words or action. This intention must be recognised, and its resultant conventions accepted before we can judge fairly of the way in which it has been realised. But, after all, the strongest motive for suspending judgment and looking a little below the surface is the respect due to the great artists who took part in these works, viz., the three brothers D'Enrico, of Alagna, the great Fleming Tabacchetti, and Gaudenzio Ferrari. However, it is not my intention to discuss the sculptures, and I have only said so much because it was impossible to speak of the chapels without alluding to that for which they exist. At Varese and Orta we may leave the contents of the buildings out of count altogether, but at Varallo there are both frescoes and sculptures which undoubtedly take a high place among the works even of that great period, the Cinquecento.

The Sacro Monte rises precipitously to a

Fig. 1. Pierced Wooden Screen, Varallo.

height of about 500 ft. above the little town, and is approached by a paved and well-graded path overshadowed by the chestnuts with which the flank of the hill is covered. When the top is reached the first impression is a bewildering one, as of an inconsequent and haphazard jumble of chapels. But even when many hands and many minds have laboured on a piece of work, and at long intervals of time, that is not the Italian way. As a matter of fact, building went on at irregular intervals during a period of two centuries and more. Over forty chapels had to be huddled on to a small, irregular, and *accidenté* piece of ground; they had to be approached in a certain order, and no architect of repute, except the rather second-rate Alessi and Tibaldi, was employed. Yet the result is what we see.

When the sanctuary was first projected it was doubtless impossible to foresee to what an extent the scheme would develop. So it came about that as new chapels were founded from time to time they were built on convenient spots, with due regard to æsthetic requirements, but without much consideration for the chronological sequence of the events commemorated. Towards the close of the XVIth century Tibaldi was commissioned to prepare a plan to remedy this confusion, and though little or nothing in the way of building can be attributed to him, the arrangement of the connecting path by which the chapels are linked in their proper order seems to have been his. The sinuosities of this path are far more judicious than the serpentine meanders of the *jardin Anglais*, and there is much of the characteristic charm of the Italian garden in the lay-out, in which we include the length of time required to find out how small the area of ground covered really is. The path, of course, is cobble-paved with cross ribs of granite to afford foothold where the gradient is steep. It is bordered with trim hedges of box and beech; clipped shrubs and stone seats are set in the right places, and the chapels themselves supply points of interest at every turn of the way.

Fig. 3. The Scala Santa, Varallo.

The walls are plastered, the columns and dressings of grey granite, a combination equally charming and appropriate whether among the bleak Breton moorlands or on the wooded slopes of these *riant* Alpine valleys. Much, of course, will depend upon the texture of the plaster, and we may trust the Italian even now to get an interesting surface in that material; while the fine stone slabs with which the roofs are covered would suffice to confer a sort of dignity upon the meanest shed. Owing to the absence of coursing they have a curious appearance of having been thrown helter-skelter on to the roof, and though doubtless they lie closer than they seem to do, and there must be no little method in the madness of their laying, it is not easy to see how they manage to exclude the searching snows of winter.

Fig. 2. Chapel of the Transfiguration, Varallo.

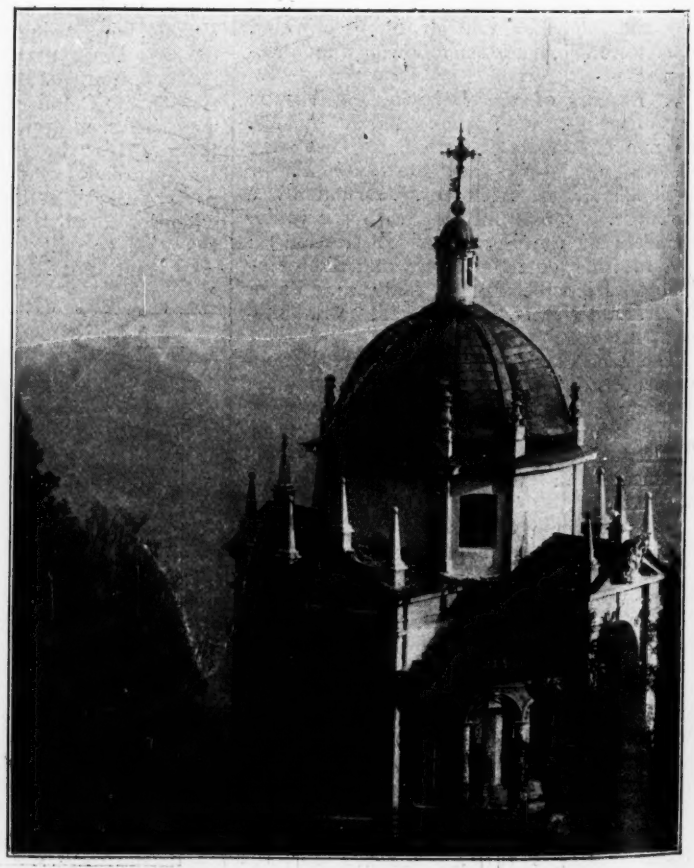

Fig. 5. Domed Chapel, Orta.

In beauty of colour and texture these roofs excel, if that were possible, the stone roofs of the Cotswolds, and to one looking down from the Sacro Monte upon the huddled houses of Varallo, the little town seems clothed in mouse-coloured velvet, with an occasional patch of tiling to give the effect of rose-coloured *revers*.

In the erection of the chapels two systems of planning have been followed. The earlier were built upon a simple quadrilateral plan, divided by a screen into two compartments, the inner for the sculpture, and the outer for the accommodation of the pilgrims. In the later examples the entire space is given to the representation, and an external portico is attached to shelter the spectators, with grilled openings to the interior. The screen is often the most interesting part of the building. The upper part is usually glazed with nice old glass of pleasant tint and texture. Below is an oblong grille of carved wood (Fig. 1), the upper part sometimes canted to afford a comfortable view of the wall and ceiling paintings. These wooden lattices are a peculiar feature of Varallo, as the iron grilles are of Orta.

The highest point is a rounded knoll, the summit of which is occupied by the chapel of the Transfiguration (Fig. 2). This is a huge plain drum 40 ft. in diameter and of considerable height; in itself bald and unsatisfying. But note firstly the charming contrast afforded by the porch with its delicate coupled columns and interesting entablature; and secondly, it should be borne in mind that these chapels are not so much isolated objects as parts of a composition. The architects of the XVIIth century at their worst were usually good scene-painters, who thoroughly grasped the art of grouping and of producing striking effects. It was probably their feeling for scenic propriety which led them to adopt the circular or polygonal plan whenever they had to build a chapel on an eminence. Orta and Varese supply numerous examples of this preference.

The concluding chapels of the series are grouped together near the edge of the precipice overlooking the town, so as to form a sort of piazza. One side is occupied by the large church of the Assumption, the other three by a picturesque medley of chapels, cloisters, and loggias. The church has an intolerable modern façade, gaudy and pompous; in most unpleasing contrast to the quiet beauty of the rest.

Three large chapels, containing respectively the Nailing to the Cross, the Crucifixion, and the Deposition, form an important group in the south-east corner. They are raised partly on a lofty substructure, partly on the native rock. A loggia extends along the front, approached by a flight of steps at either end. The first and last contain notable works by G. d'Enrico. In the Crucifixion chapel both sculpture and paintings are by Ferrari. As you turn from this you are faced by the light colonnades of the Scala Santa (Fig, 3), an imitation for pilgrimage purposes of the Roman original, by which we may ascend to the upper cloister to enjoy another view over the piazza, and a wonderful outlook through the clairvoyées at the back up the valley of the Sesia, with Monte Rosa's snowy summit closing the distance.

Taken as a whole, the chapels of Varallo must be pronounced inferior in delicacy and refinement to the best of those at Orta, and in grandeur and scenic picturesqueness to those at Varese; but in simplicity, variety, and skilful grouping they are hard to beat. Moreover, and this is perhaps their greatest merit, they are entirely suited to their situation and use. The gentlemanly elegance of Orta and the pomposity of Varese would alike have been out of place amid these sunny Alpine pastures, where such beauty alone need be sought as comes from that harmonious blending with nature which ever rewards the unaffected use of those materials which come readiest to hand.

Orta.

The Sacro Monte of Varallo was, as I said, the first and for about 100 years the only thing of its kind. But in 1583 we have the first notice of a sanctuary being in contemplation at Orta. Here again the inspiration came from the Franciscan Order, and was probably suggested by a visit of S. Charles Borromeo to Orta on his return from Varallo. The single narrow street of which the little town of Orta consists runs along the shore of its lake, at the foot of a steep promontory which projects nearly halfway across the water. Its summit is occupied by the sanctuary. Here is a monastery and twenty chapels, standing in a sort of wood, intersected by grassy glades and commanding exquisite and everchanging views of lake and mountain. The entrance arch is approached by a cobbled path bordered by cropped limes. It is surmounted by a figure of S. Francis, in whose honour and to depict the scenes of whose life the chapels were erected.

The materials employed here are the same as at Varallo, namely, granite and plaster, but with the addition of a dark serpentine marble, which takes the finest detail, and is used with excellent effect for the smaller moulded members, as caps, bases, and architraves. The lay-out differs from that of Varallo, inasmuch as the chapels have been placed so as to get the best effect from each separate building, rather than with an eye to picturesqueness of grouping.

All the best chapels were erected between the years 1591 and 1630. Dr. Goldhardt—to whose pamphlet I am much indebted—discusses the authorship of these works, and attributes them on evidence which seems fairly conclusive to a Franciscan, Padre Cleto, of Novara. He draws attention to the significant fact that the style is old-fashioned, in fact, about a century behind the times; and suggests the inference that the designer was an amateur of Classic architecture, uninfluenced in the seclusion of the cloister by current movements and fashions, and this by no means to the detriment of his art.

In contrast with the sculptures at Varallo, the figure groups here are of no account: nor is the arrangement of the darkish interiors so well adapted for their display. But all the more worthy of attention is the outside treatment. Delicacy, economy of means—in many cases the cornices and other members are reduced to their most rudimentary forms—elegance of proportion, these are perhaps the most outstanding notes.

We now come to two more important chapels. They are both simple oblongs surrounded by colonnaded loggias, and it is interesting to observe how from very similar plans two utterly different buildings grow. The first, known as the Madonna of the Angels, from the trumpeting angels on the roof, is the most ornate of all. Owing to its position on the brow of the hill it was impossible to get a better view of the façade, which is charmingly composed, and for its date (1606) most refined in detail. The other chapel, No. 6, was built about ten years later. The fifteenth chapel, which has been so oddly connected with the name of Michelangelo, is one of those simple, inevitable, and masterly designs wherein consummate art lurks artfully concealed. The attribution of the authorship to the great Florentine master is, of course, worthless, except as evidence of traditional admiration. It is difficult to imagine anything more remote from the austere grandiosity of Michelangelo's

Fig. 4. The Octagon Chapel, Orta.

Fig. 6. Chapel at Varese.

manner than the Mozartian urbanity and grace of this little building.

We are now on the highest point of the Sacro Monte, and are, therefore, prepared to find, as at Varallo, a circular chapel. The plan is of the utmost simplicity—a plain drum surrounded by a peristyle of twelve slender Doric columns bearing semicircular arches. The stylobate is broken at the cardinal points by flights of steps for access to the ambulatory which is roofed with a lean-to. This plan is the earliest example (1597) of a central block surrounded by a portico, and exercised considerable influence upon the later chapels both here and at Varese. Henceforth all the more important ones display this feature.

The eighth chapel (Fig. 4) is obviously a variant upon the same theme, the octagon being taken as a basis instead of the circle. It is clear from the plan that the ambulatory involved the designer in sundry difficulties. The arches, if only eight in number, would become sprawling and ill-proportioned unless they could be carried to an extravagant height. The difficulty has been overcome by a similar device to that so often employed in the aisle of a Gothic apse, viz., by the division into alternate square and triangular spaces, producing thereby a sixteen-sided ambulatory.

In a small late building like this, by no means one of the best of its kind, one is surprised at the feeling for effect, the unerring knowledge and command of every device whereby the desired effect is produced, the freedom in handling difficulties. The squares I spoke of just now in the plan of the ambulatory are not squares, the sides incline inwards towards one another; that was dictated by the proportions of the arches (and an Italian mason is not one to bungle over the irregular vault thereby produced); nor are the faces from which the cross arches spring parallel; that gets over another difficulty; true, it lands you in a winding arch, but as that is only in plastered rubble nobody's bones are broken. By-and-by we shall see another way in which the difficulties of an octagon surrounded by an arcaded loggia were faced at Varese.

I have dwelt thus at length on the plan of this chapel because, in spite of certain signs of debasement, it is a fair example of the skill with which these obscure masons handled their "Renaissance box of bricks."

The next chapel is elliptical in plan—sure evidence of Baroque influence, and the porch seems stuck on.

Inside there is a good iron screen. There must have been a school of excellent smiths in this district. Almost every house in the town has a good iron balcony, and the neighbouring villages and churches are rich in ironwork, as well as the Sacro Monte itself. Even when the design is a little riotous the workmanship is careful, and even precise.

The doorway from No. X. is of the same date as the entrance arch, and is not a bad example of the use of the black serpentine. It was interesting to find that the capitals are copied from an antique in the old church of S. Giulio on the island. This chapel also has a fine grille, of which it was possible to photograph the central portion. One of the most charming structures here is the little well-house. The pedestals and caps are pentagonal, which is, I suppose, the only way of getting comfortably round an octagon.

Varese.

The town of Varese is situated on the verge of the plain of Lombardy. About three miles to the north, in the direction of the mountains, and some 400 ft. above the town, is the entrance of the Sacro Monte.

The general scheme is quite different from what we have seen before; the chapels are not grouped in a confined space, but follow a broad paved road which ascends in zig-zags along a rising ridge. A chapel is placed at each turn of the road, and intermediately wherever a long straight run occurs. The road is perhaps 2½ miles long, and is the main approach to the ancient hill town of S. Maria del Monte, which occupies the summit. The construction of the road was contemporary with that of the chapels, and no little skill and feeling is shown in its disposition and planning. Not only had it to follow the line of least resistance, so far as climbing the hill is concerned; but it is so schemed that the chapels show to the best advantage from below, and also provide the best points of view for the enjoyment of the landscape.

Again a Franciscan was the originator of the scheme, the execution of which was entrusted to the architect Bernascone, of Varese. There are fifteen chapels, in illustration of the mysteries of the Rosary, each group of five being separated from the next by an arch and fountain. With the exception of five late and unimportant buildings all are Bernascone's work, and show him to have been a man of considerable imaginative and inventive power. Though begun only ten years later than Orta, it is quite 100 years later in manner. If the chapels there were the work of a refined and gifted amateur, here they suggest the professional man, quite up-to-date and to all the tricks of the trade. A marked difference is observable at once in the colour of the buildings; we have exchanged the stone roofs and whitewash of the mountain valleys for the tiles and yellowish stucco of the plain. Granite is more sparingly used, and the increased use of stucco instead of stone for ornamental features gives a sort of coarseness that smacks of a declining art.

The plan of the first chapel is similar to two of those at Orta, viz., a colonnaded portico round three sides of an oblong cell. But here the elevations suggest a Classic temple. We now find for the first time view openings in the sides of the building as well as in front. In this case they are rather prettily treated.

The second chapel is insignificant, and at the first turn we come to No. III. Here importance is given to the side openings, which became regular transepts. Their treatment is, however, much more successful in the next chapel (Fig. 5), which is designed like a domed church on the plan of a Greek cross, the transepts and aisles being as it were turned inside out. The external division of the copper-covered dome into eight unequal segments is noteworthy; the wide divisions corresponding to the transepts, and the narrow to the interspaces. The undue width of the broader divisions is cunningly counteracted by the keel-like form given to them.

Immediately opposite this last is the most important building of the series. It is also the most complicated both in plan and design, but is a fine, masculine piece of work, which, as I found on my second visit to Varese, improves greatly upon further acquaintance. The transeptal form of plan is again adopted, in this case grafted upon an octagon (Fig.6). The transepts instead of being connected by arcades, are joined merely by balustrades, which play a curiously important part in the elevation, as you will see. At first sight it is impossible to believe that they are horizontal. Their raking lines seem to buttress the main portico with a studied effect of support, and cause the whole building to sit securely on the side of the slope. The illusion is increased by the want of parallelism between them and the main block, so that in perspective their lines vanish to different points. You will observe what excellent effect is obtained by tiling the cornices; how by this simple means a very strong line may be produced without unduly coarsening the mouldings.

At the next turn of the road the town on the mountain-top comes into view with something of a shock. The chapel of the Flagellation at this spot has certain good points; a life-size Pietà, most effectively placed over the portico, and some pretty plaster work in the vault. The road now ascends rapidly along the side of a deep valley to the Crucifixion chapel, with an interesting porch surmounted by a delicate pierced iron cross, designed to silhouette itself against the whiteness of the wall behind. The ironwork here is not quite up to the Orta level. It is often enriched with bronze ornaments which have acquired an exquisite patina. The plan of the Ascension chapel is interesting; an elongated octagon within and an ellipse without, to which is attached a large portico, a sumptuous piece of Baroque design.

The last chapel of Bernascone's is very simply planned.

"Ah, me! what perils do environ the man that meddles with" simplicity. It looks so inevitable, and is so full of pitfalls. The vaults of the ambulatory are barrels decreasing both in width and height inwards, sections of a cone, in fact; and the arches which separate them follow the lines of the pilasters from which they spring, so that an angle runs along the soffite, salient for half its circuit, and re-entering for the other half, and just disappearing at the apex.

But we are now at the end of our pilgrimage, which has been, I fear, a rather monotonous one. If what I have shown to-night should induce any of my hearers to visit these remarkable places, in autumn for choice, when the loveliness of the Italian hills is almost incredible, I am convinced that whatever his opinion of the merits of the architecture may be, his visit will not end in disappointment."

[The greater part of the numerous lantern illustrations, a few of which we have been able to reproduce here, were from photographs taken by Mr. Lumley Cator, who visited the sites in company with Mr. Eden.]

Mr. Theodore Fyfe, in proposing a vote of thanks to Mr. Eden, said the whole of the north of Italy was extraordinarily interesting, and something of the austerity of the Alps seemed to pervade it. Even the very small towns had a distinction of their own, and the structures seemed distinctive of the different places. There was a fine early Renaissance feeling in most of the architecture, and tradition called it the Bramante influence, and it certainly seemed more suggestive of Bramante than of Michelangelo. One could see painted waxworks together and appreciate them, and he agreed that the way to look at these things was from the point of view of stagework, influenced by religion; if looked at as religious decoration only they seemed grotesque; but they were remarkably fine work.

Mr. P. E. Newton, who accompanied Mr. Eden on his first journey to Orta, seconded the vote of thanks, and said the colour was really wonderful. The slate roofs were rather the colour of cippolino. Orta was a quiet place, where one could spend a delightful week or two; it was not thronged with steamers as Como and Maggiore were.

Mr. H. H. Statham said he had been much struck by the series of examples brought before them. What especially impressed one was what an endless place Italy was. They had seen a number of architectural erections which probably very few of them knew anything about, and it showed that, outside the well-known monuments of Italy, it was worth while going to the unknown places, and to look at what was to be seen. One point struck him in regard to the various chapels and the interesting and varied plans they showed; they suggested the advisability when formulating a plan, of considering how to treat it in superstructure. Mr. Eden had pointed out cases where the builders got into difficulties with the roofing in developing their plans.

Mr. Arthur Keen said that what struck him most was the great beauty of the detail of the places illustrated, as if the detail had been left to the fancy of the particular craftsman who was employed, without too

much control from the architect, and with most satisfactory results. They must all have felt that the architectural work shown in the buildings illustrated, excepting perhaps in the case of Varese, was of rather an amateurish kind—a good many good conceptions not well carried out; but the detail was of a delightful kind, especially the iron grilles and the carved work.

Mr. Gerald Horsley said he should like to ask Mr. Eden if he knew whether Ferrari designed any of the chapels referred to, or any other architectural buildings. It was known that he was the sculptor of several of those groups in terra-cotta which Mr. Eden had shown from Varallo, and he (Mr. Horsley) believed he painted the backgrounds in fresco on the walls of the chapel, and, as Mr. Eden said, he was a great *cinquecento* artist; but besides his sculpture and painting, was he the architect of any building?

The Chairman then put the vote of thanks to the meeting and it was heartily agreed to.

Mr. Eden, in reply, said he did not think that Ferrari acted as an architect. Certainly some of the other workers in terra-cotta who did the figures were also the architects of the buildings. One was the architect of the Scala Santa at Varallo, and of the larger chapels. Another did some of the big figures, and a third painted the background. He supposed that the best group of figures at Varallo and the most celebrated lot were in the Crucifixion Chapel, and the frescoes were by Ferrari. Of one sculptor employed it was recorded that he did such a number of chapels that he went mad, and one could understand that in doing some fifty or sixty of these chapels that that might be the fate of an artist; but in this case he recovered and did more work.

The Chairman announced that the next ordinary general meeting will be held on January 14. Paper by Mr. J. Starkie Gardner on "A Comparison Between English and Continental Ornamental Ironwork."

The meeting then concluded.

PICTURE EXHIBITIONS.

THE DOWDESWELL GALLERY.

THE series of drawings in illustration of "The Parables," by a French artist, M. Eugène Burnand, now on view at Messrs. Dowdeswell's Galleries, are of more than ordinary interest. They are drawings, apparently in *fusain*, to a pretty large scale, giving illustrations of the Parables, and show a great deal of power of expression and composition.

It is curious to contrast these with the comparatively tame and commonplace character of the large and highly-finished oil-painting, "The Way of Sorrow," by the same artist, which is exhibited in another room. It is not the first time one has noticed that an artist who exhibits great power and originality in black-and-white work seems unable to carry these qualities into the higher and more exacting art of oil-painting.

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

THE *Bureau Annual* has been considerably enlarged, and comprises this year a full architect's diary and also an address register of the manufacturers who supply the various goods mentioned in the tabulated prices. The principle followed has been to take each trade in the usual order to be found in a bill of quantities, and set out in detail every class of material and fitting in that trade in three tables of cost, A, B, and C, corresponding to goods of low cost, medium, and higher. At a glance, therefore, can be seen the range of cost of every material and fitting.

The prices have been obtained from information supplied by and from the lists of manufacturers, and are virtually a condensation of the mass of price-lists and catalogues issued to architects.

On the opposite page to the prices will be found the name, address, and telephone number of the manufacturers who supply the various goods, or the reference number can be forwarded to the Bureau, when particulars of the desired goods at the cost named will be forwarded direct.

A meeting takes place this week (Friday) for the consideration of manufacturers' goods, with the end in view of distributing the approved circulars amongst architects. A number of goods will also be submitted to the Selection Committee for their approval before placing them in the permanent exhibition of building materials and fittings, which is to be opened in the New Year.

Manufacturers exhibiting in the exhibition are required to have their goods in position by January 1, 1910.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir R. Melvill Beachcroft, Chairman, presiding.

Church of All Hallows, Barking.—The Local Government, Records, and Museums Committee reported as follows:—

"There has been brought to our notice a proposal of the Metropolitan and District Railway Companies to rebuild Mark-lane Station. The proposal includes a scheme to erect over what is now practically a ventilating opening, buildings to a height of from 26 ft. to 34 ft. As buildings of this height would seriously interfere with the view, from the north side, of All Hallows, Barking, which is an exceptionally fine specimen of XVth-century Gothic architecture, containing much fine woodcarving and many ancient monumental brasses, and one of the few churches that escaped the Great Fire of London, endeavours have been made to secure a restriction in height of the proposed buildings. At the instance of the Council certain modifications have been made in the plans which will lessen to some extent the obstruction to the view of the church, and we have caused a letter to be addressed to the Corporation of the City of London expressing the hope that it will take any action it can to secure an unrestricted view of the church."

Subway under Victoria-embankment.—The Improvements Committee recommended:—

"That, without the Council being in any way committed to the approval, in principle, of the proposal for the construction of a subway or subways under the Victoria-embankment, and pending such decision as the Council may hereafter come to as a result of the consideration of a further report by the Improvements Committee and of a report by the Finance Committee, application to Parliament in the session of 1910 for authority to construct a subway under Victoria-embankment in general accordance with the plan, be authorised."

The recommendation was agreed to.

The London Labour Clause.—The General Purposes Committee reported upon the employment of London labour, and mentioned that the question had arisen on many occasions. Hence it was desirable that there should be a standing order requiring that on all work for the Council executed within the county, preference should be given to London men. The Committee recommended that the standing order should be:—In every contract involving the employment of workmen in the county of London a clause shall be inserted to provide that when taking on workmen for the purpose of the work to be done under the contract, the contractor shall give preference to London men, that is, men usually employed in the county and resident within a radius of twenty miles from Charing Cross.

There was an amendment in the name of Mr. Simmons to the effect that:—"If wilful default is made, the name of the contractor will be placed on the list of persons from whom the Council will not accept tenders.

Mr. Dove said the reason for such a clause arose some years ago, when London men were looking on whilst provincial men were laying down electric tramways. It was only right that there should be a definite understanding that for London work the Council should insist upon the employment of London men. There would be no trouble in ascertaining whether the clause was being observed by the contractors.

Mr. Simmons declared that the clause would do much to stop the influx of provincial labour. There was a plentiful supply of labour for the contractors to call upon in London.

The Hon. W. R. Peel said they were trying to remedy a real evil. It was hard that London workmen should have to be out of work when provincial men came to London to do work. It was perfectly fair to contractors to request that they should give preference to London men. It was a difficult matter, he knew, but it was a good thing to get the contractors to co-operate with the Council in helping London men.

Mr. E. Speir said the result of this strange policy would end with the borough councils restricting their work to the men resident in the boroughs. The right policy was for free trade in labour. Free trade was far better for labour than protection.

Mr. Gordon said when a London contractor accepted a provincial job, the practice was to send down the chief men, and to engage the ordinary labour in the locality. And if a provincial contractor got a London contract, he went to the London labour market. Practical contractors knew that it was well to get men on the spot.

Mr. Robinson said that if the proposed standing order were adopted, all contractors would understand that in accepting contracts they would have to give preference to London men.

Mr. Jessop said the whole business was merely a vote-catching dodge. The clause would only lead to complications. In view of the establishment of employment bureaux there was no necessity to have any such clause.

Sir John McDougall said there were matters which might cause trouble. For example, the Council was about to give a contract for a main drain which would extend over four years. At what period would the point arise as to whether preference was given to London men, and when would the contractors be called to answer for any failure there might be to observe the clause?

Mr. Johnson said the whole business was merely discreditable electioneering tactics.

The recommendation of the Committee, as amended by Mr. Simmonds's amendment, was carried.

Hampton Court Palace.—It was reported by the General Purposes Committee that the First Commissioner of Works had requested that, in consequence of criticism of the arrangements in force for the protection of Hampton Court Palace in case of fire, the Chief Officer of the London Fire Brigade might be permitted to make an inspection of the palace at an early date with a view to his advising the First Commissioner in the matter. Although a large number of Government buildings were at present periodically inspected by the Chief Officer, it had not been the practice for buildings outside the county of London to be so inspected, but in view of the special character of Hampton Court Palace and its national importance, the Fire Brigade Committee were of opinion, and the general Purposes Committee concurred, that the request of the First Commissioner should, as a special case, be acceded to, and they recommended accordingly.

The recommendation was adopted *nem. con.*

Fire Brigade Station.—The Fire Brigade Committee recommended the acceptance of the tender of Messrs. Kerridge & Shaw, of Cambridge, amounting to 16,861*l.*, for the extension of the chief station of the fire brigade.

Attention was called to the fact that the second tender, of Messrs. Kirk & Randall, London, was only 16,866*l.*, and it was suggested that it would be well to spend another 5*l.* in order to give work for London men.

Under the circumstances, the Chairman of the Committee said he would take the matter back to consider the subject.

The Low-level Sewer.—The Main Drainage Committee recommended that the tender of Messrs. Griffiths & Co., 481,553*l.* 9s. 11d., be accepted for the construction of the southern low-level sewer. After a short debate the tender was accepted. It will be remembered that the matter was before the Council a few months ago, when a tender then recommended for acceptance was withdrawn, thus necessitating the new tenders now dealt with.

Mr. Easton mentioned that a clause would be inserted in the contract providing for the payment of 8d. per hour for night work.

Hoxton Schools.—The tender of Messrs. W. Johnson & Co., 32,650*l.*, was recommended for new schools on the Hoxton House site, for which the architect's estimate was 31,473*l.*

Mr. Johnson said that since the Works Department had been abolished, the contractors had taken advantage, and were now tendering above the architect's estimates.

Mr. Hunt replied that the Engineer and the Architect had recently made a revision in their schedule on which they based their estimates, and the result was now that possibly estimates might be lower than was the case previously.

The tender was accepted.

Having transacted other business the Council adjourned.

DECEMBER 18, 1909.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

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MEETINGS.

FRIDAY, DECEMBER 17.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. Alexander Davidson on "Chester." Illustrated. 8 p.m.

The Institution of Mechanical Engineers.—Mr. William Mason, of the University of Liverpool, on "Mild-Steel Tubes in Compression and under Combined Stress"; and Mr. C. A. M. Smith, B.Sc., East London College (University of London), on "Compound Stress Experiments." 8 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. H. T. Tudsbery on "The Foundation and Construction of Dock Walls." 8 p.m.

SATURDAY, DECEMBER 18.

Institution of Civil Engineers.—Students' visit to the printing works of Messrs. Edward Lloyd, Ltd., Salisbury-square, E.C. 8.30 p.m.

TUESDAY, DECEMBER 21.

University Extension Guild (British Museum).—Lectures on "Ancient Architecture," by Mr. Banister Fletcher.—XII. "Theatres, Propylæa, Tombs, and Public Buildings of the Greeks." 4.30 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy."—X. 6 p.m.

Fifty Years Ago.

FROM THE *Builder* OF DECEMBER 17, 1859.

TRADES' UNIONS.

SIR,—Mr. G. Potter,' in his letter of last week, unreservedly states that, to ask the trades' unions to adopt rules against interfering with non-society men "is neither more nor less than asking trades' unions to become the endorsers and enforcers of the odious document."

Presuming that Mr. Potter fairly represents the unions, and that they wish to reserve their right to molest and interfere with non-society men, I see no alternative for the associated masters but to continue the "declaration."

The paper put forward by Lord St. Leonards is in substance precisely what I propose, viz., that the trade societies should conform to the spirit of the law, by abstaining from all interference with those who do not choose to be bound by their rules and practices. A MASTER BUILDER.

*** In the light of the present day and of recent legislation, comment on this could only be an irony.—ED.

THE *BUILDER* COMPETITION.

THE designs which have been sent in for our competition for a proposed treatment of the front of No. 9, Conduit-street will, by the kindness of the Council of the Architectural Association, be on view in the gallery at 18, Tufton-street from Monday to Friday next week, except on Tuesday morning, when the assessors will be engaged in examining the drawings and making their award.

OUR NEW YEAR'S NUMBER.

IN our New Year's number, which will be published on January 1, the plates (an extra number, as usual) will be devoted entirely to the illustration of the works of Mr. R. Norman Shaw, R.A.; chiefly from the fine drawings made by his own hand.

Illustrations.

THE GARDENS AT SOUTH STONEHAM HOUSE, HAMPSHIRE.

THESE gardens cover an area of about $7\frac{1}{2}$ acres; $5\frac{3}{4}$ acres of which were meadowland, lying slightly below the surface-level of the River Itchen, and $1\frac{3}{4}$ acres of glebe land at a higher level, bounded by the tidal water of the old Monks River, a tributary of which also bounds one side of the low-lying land. The two divisions of land, which really form quite separate gardens, are divided from each other by the Monks River and a thick wood of fine chestnuts and elm trees surrounding a lake, lying to the right of the drawing.

The drawing illustrates the junction of the two portions of garden by a timber bridge over the Monks River and a path cut through the edge of the wood. The low-lying land which has come to be called the River Garden, has been drained and the banks holding back the Itchen and the tidal stream have been raised and solidified. Irrigation streams which ran all over this low land have been filled up, and the boggy places made as firm as possible.

A wide central path running from the centre of the glebe land, over the bridge shown, leads to the weather-boarded summer-house beyond, which forms the central feature of a wide-circled flower-border backed with poles and chains covered with climbing roses against a background of black poplars. At either end of this border stand small square gardens, enclosed in trellis-work and surrounded by weeping willows. Around one of these little squares has been formed a water channel, broken up by tiny square and circular pools forming a Bog Garden, fed by a sluice from the Itchen, and joining later into one stream which flows under a bridge and pergola to feed a small lake on the lawn, and finally drains at low tide into the tidal water. An arrangement of dams allows a quantity of water to flow from this lake into a separate system of water channels around a square sunk lawn, lying immediately beyond the wood and divided from the surrounding ground by raised banks and hedges.

Lying beyond this lawn is a slightly raised terrace path running at right angles to the main path, with flower borders and water channels, and linking up by means of bridges over the tidal water with both the Bog Garden and its corresponding features—the small flower garden surrounded by trellis—which opens into the chestnut avenue (seen on the left of the drawing).

The raised banks running entirely round this ground are used as turf walks, bordered by little water-courses, giving an opportunity of growing irises and flags, and also serving to catch any water finding its way over or through the banks in times of floods. The general intention was to treat as lawn only the portions enclosed by the circled flower border and to allow the remainder of the ground to form an immense bog garden, full of natural water plants and flowers, and framed by the turf walks by the river side.

The preliminary work in connexion with this part was carried out with great difficulty, between tides which covered the ground to a depth of 2 ft. to 3 ft., until the banks and drainage were completed.

The glebe land was terraced and divided into a large main Flower Garden, surrounded by a Spring Garden, a September Garden, and an Orange-coloured Garden—at changing levels—mostly with turf walks and wide borders, all planned on very simple lines, the whole being linked up to the existing gardens by the terrace shown in the foreground of the drawing.

The general contractor was Mr. H. Lawrence, of Bitterne Park, Southampton; the nurserymen were Messrs. Ware, Limited, of Feltham; the trellis for summer-house and Hopton wood fountains are by Messrs. White, of Pyghtle Works, Bedford.

The whole was designed and carried out under the superintendence of Mr. L. Rome Guthrie, architect, and forms a very interesting and useful example of the architectural treatment of garden ground, and the formation of an artistic design out of previously untreated land.

NEW PREMISES, Nos. 308-320, OXFORD-STREET.

THIS building, which has been erected in four separate sections, has been modelled after careful study of numerous large trade buildings in Paris, Vienna, and Berlin, the planning being adapted to the latest needs of London. There are lofty, well-lighted and well-ventilated shopping floors provided on the basement, ground, first and second floors, and a special feature is the large open central well through the first and second floors surmounted by a lantern light glazed with fire-resisting glass.

The inevitable plate glass shop fronts have been forced into prominence, for Oxford-street has not yet fully learnt that good architecture will recoup reasonably for some loss of plate glass.

The building has been faced with Greek Pentelikon marble relieved by Greek Cippolino marble columns and pilasters, but even these classic materials will not withstand the London atmosphere without periodical cleaning and polishing.

The carving has been executed by Mr. C. H. Mabey.

The general construction is largely carried out with steel framework, including numerous solid steel columns to carry the heavy concentrated loads over long spans.

The large central and angle entrances with the island show-case are special features which afford access to the main shops, at the back of which are three passenger-lifts, and a winding staircase extending from the basement to the second floor, which is constructed in reinforced concrete covered with Austrian oak and enclosed with wrought-iron balustrading. This staircase withstood a test of 60 tons of lead pigs which were spread all over it for two days, and produced a deflection of about $\frac{1}{50}$th part of an inch.

On the second floor is a large and rather luxurious restaurant panelled in oak with several low-relief modelled panels, by Mr. Brook Hitch, finished in old ivory and representing Harvest, Commerce, Industry, Science and Trade. On this floor are also a ladies' lounge and a gentlemen's smoking-room, whilst on the floors above are the large kitchen, the staff dining-rooms, etc.

In addition to the principal staircase there are four London County Council fire-escape staircases required under the Act of 1905.

The staff and trades entrance is from Chapel-place, where the elevation is faced with Portland stone and Crowborough bricks, with quoins in Lawrence's red bricks; near this entrance is a service-lift to supply the kitchen, etc.

The basement is connected with the old eastern block by two subways built under Old Cavendish-street, and the cash bureau is located here, to which all the pneumatic cash tubes are connected from numerous stations throughout the building.

In the sub-basement are placed fur stores, strong room, electric switch-room and boiler-room containing two large horizontal boilers for working the cooking plant and heating the building by accelerated low-pressure hot water. There are fixed here the ozoniser, fan, cleansing-screen, and large ducts for ventilating throughout by ozonised air. There is also on this floor the electric suction plant for working the cash tubes.

Most of the joinery in the building is Austrian oak, the floors are steel and concrete covered with oak and pitch-pine wood blocks, and the ceilings generally are fibrous plaster. The subsoil is gravel, but water was tapped, and a complete system of Seyssel asphalting horizontally and vertically was carried out.

There are two glissoires or spiral shoots provided to convey the parcels from all the floors to the basement, where they are discharged on to a parcel-transporter, which is a continuous moving belt worked by electric motors, and thus the parcels are conveyed and discharged in the old eastern block upon a large revolving-table, where they are sorted and rapidly despatched.

The electric lighting is chiefly by arc-lamps, and sprinklers and other fire-extinguishing appliances are fitted throughout.

The builders for the first section were Messrs. Howard & Co.; for the other three sections, Mr. C. F. Kearley.

Mr. John Murray is the architect.

DESIGNS FOR SIMPLE LEADED GLASS.

THESE are executed designs for the stained and leaded glass in windows, screens, doors, staircase and board-room of the Cardiff Channel Dry Dock and Pontoon Company's new offices at Cardiff Docks. The work was executed under Mr. W. H. Scott, architect for the managing director of the company.

The glass employed was entirely Norman slabs and English antique glass of fine quality, with heavy leading.

WALTER H. CAMM.

THE SOCIETY OF ARCHITECTS:

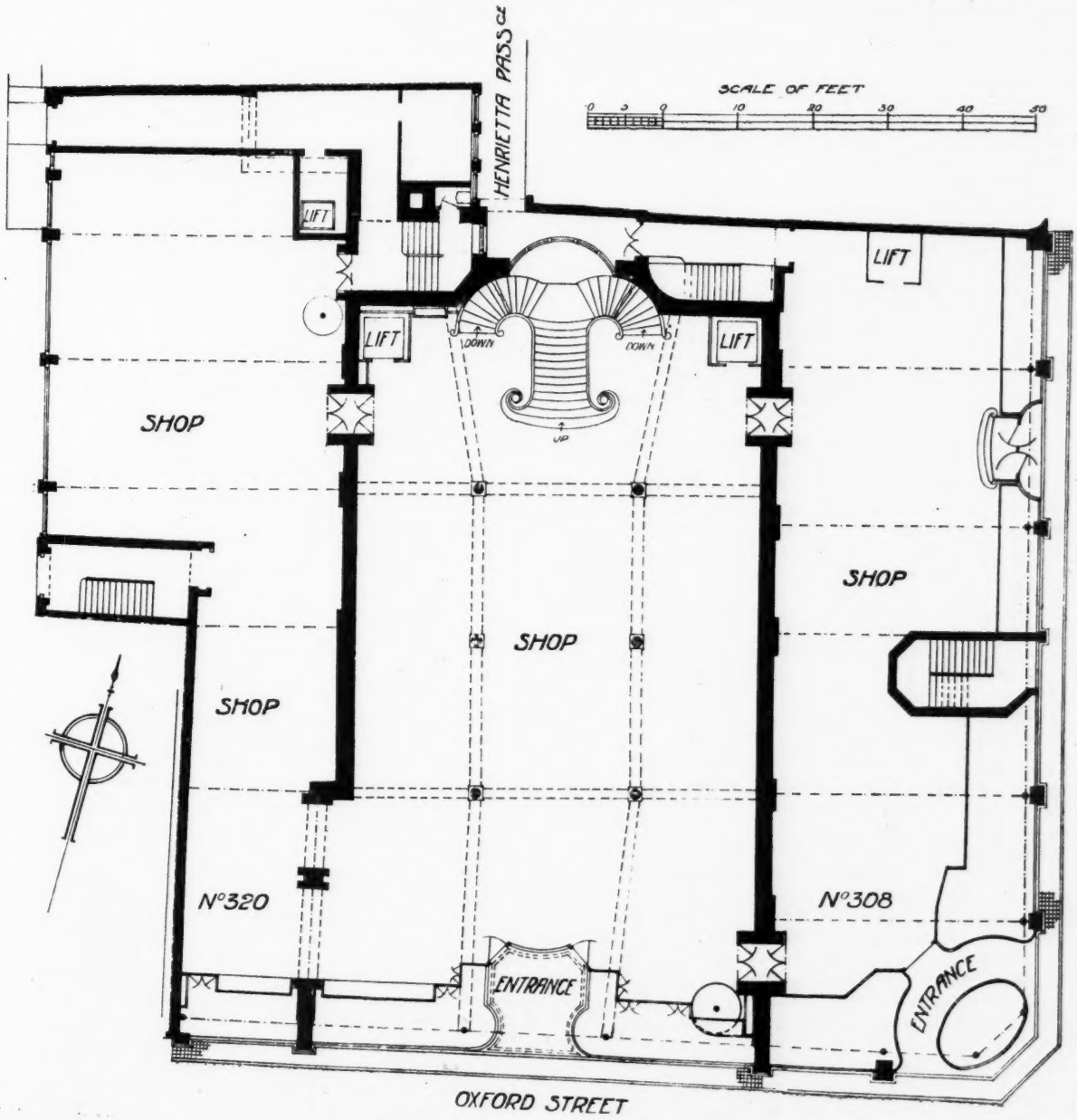
TOWN PLANNING.

A MEETING of the Society of Architects was held on Thursday last week at Staple Inn-buildings (South), Holborn, W.C., Mr. G. E. Bond, J.P., President, in the chair.

The minutes having been read and confirmed, the following gentlemen were elected, *i.e.*, as hon. member, Sir William van Hulsteyn, Kt., M.L.A., Johannesburg; as members, Messrs. J. C. Broderick, Montreal, Canada; G. Coles, Leytonstone; W. A. Cornell, Wimbledon; A. H. Johnson, Winchester; H. Slicer, Peckham; S. B. Williams, Cardiff; and W. G. Williams, Bangor. There were also four elections to the Studentship class.

Mr. Raymond Unwin then read a paper on "Town Planning," of which the following is an abstract:—

Mr. Unwin said that the town planning movement, culminating, as it had just done, in the passing of an Act conferring powers upon municipal bodies to lay out the plans of their towns in advance, and to make, at any rate, a beginning of treating their towns as large units to be considered as a whole with some foresight, called upon their profession especially to remember that the whole was greater than the part. They must begin to think in streets, in districts, and in whole cities, and henceforth to regard their buildings not so much as isolated efforts, but as units in a larger whole. Town planning, though in this country almost an unknown and forgotten art to-day, has been practised in all ages and in many parts of the world, and town plans, when examined, would be found to show an almost infinite degree of variety and individuality. The modern period of town planning had already passed through several phases of development in other countries, noticeably in Germany. In the plan of Cologne they saw town planning applied to the extension of an existing town. This plan illustrated also the change in the character of German town planning. In the centre were the irregular street lines, characteristic of the mediæval town, with a few more modern roads resulting from improvement schemes. In the zone immediately outside this area, which was set at liberty by the extension of the fortification lines during the last century,



New Premises, Oxford-street. Plan.

they saw the geometrical type of planning. Cologne had again outgrown its line of fortifications, and the town was now developing suburbs all round, planned by the municipality far ahead of the development; but the geometrical pattern work had been displaced by more flowing lines, showing a marked reaction from the rigidity of the former manner. The influence of Camillo Sitte in Germany, Austria, and the central European countries generally had resulted in a further development of the curvilinear and irregular style. The plan for the extension of the little town of Kufstein was one of the best examples of the most modern style of German work, in which the town planner concentrated his main attention on the building up of picturesque street pictures. The plan of Marienburg was a good example of a combination of the two styles of planning, certain straight thoroughfares giving a sense of framework to the town plan, while the details were filled in with the irregular streets, planned to produce the picturesque groups of buildings so characteristic of the modern German school.

Here in England, where we were about to take up this new art of town design, it behoved us to study very carefully all that had been done before. We had the great advantage of being able to profit by the experiments in different styles of work that had been carried out on the Continent during the last fifty years. We had in this country scraps of two traditions in town planning. There was the regular and symmetrical work characteristic of the Renaissance period, when for a while large schemes were grasped and sometimes carried out; and we found in Bournemouth, Buxton, Eastbourne, and some other towns that had grown up mainly on the property of one great land owner, town plans worked out under the influence of the landscape school of gardeners, consisting of flowing so-called natural lines, but, generally speaking, lacking in any large grasp or any sense of wholeness in the completed plan. It was of the greatest importance that we should, in this country, not make up our minds too hurriedly, as to one style or the other, until we have pretty thoroughly grasped the advantages of both, and the reasons which have led to the adoption of one or the other. The problem was how to weld together into one harmonious whole the undulating surface and irregular features of our country and the definite lines and ordered arrangement characteristic of good design. As illustrating this, he would like to contrast two cities.

The first was the peasants' city of Rothenburg, a unique example of unspoiled mediæval picturesqueness, the character of which sprung not from the possession of supremely beautiful buildings, but from the fact that in the whole of the town there is hardly one that does not show a simple comely beauty. It had, in a marked degree, both scale and framework. Its Market Place with the group of smaller places linking it up with the great Church, the Rathhaus, and the Herrngasse, the great street in which the patricians of the town once lived, formed together a centre finely dominating the town, while the roads leading to the main gateways were also marked out in importance by their comparative width and directness. Almost every building in the town, including the Rathhaus and the church, is roofed with the beautiful handmade Rothenburg tile of a quiet brown colour. The buildings are either built of stone, the prevailing tones of which are cream and light brown, or more frequently are plastered and treated with limewash of very similar tones. Contrast with Rothenburg the city of Karlsruhe, where the Ducal Palace formed the central feature of the town, from which a series of streets radiated to all parts of the town, so planned that this tower was the terminal feature in one direction along all these streets. On the other side there was an extensive forest, through which straight alleys have been cut, radiating from this tower in like manner. The Market Place is formed on the axis line of the town, which coincides with the central radiating street. Before the Schloss was a large fan-shaped garden place having the front of the Schloss at the apex with stable buildings, barracks, residences, and a theatre, forming the radiating flanks, while round the circular arc was built up a colonnaded crescent of houses, cut at intervals by the narrow radiating streets. It would be difficult to imagine a greater contrast than that between the style of this town and that of Rothenburg. The straight, formal lines of the streets, the geometrically shaped places, the axial treatment of the Market Place, the regular, horizontal skylines, and the entire absence of gables, with the symmetrical and regular treatment of the façades, all emphasise this difference, and yet there was the same feeling of unity of effect, the same sense of scale and framework leading up to a definite town centre that marked the more picturesque and irregular Rothenburg. The site of Karlsruhe was a level plain, having apparently nothing of natural undulation or feature within the area of the town, which needed to be much considered by the planner, so that probably in this case the unusual degree of formality of treatment was justified by the conditions. The faults of the plan were the excessive and monotonous insistence of the somewhat uninteresting power of the Schloss, the large number of acute angled corners and the uncomfortable shape of many of the places, road junctions, and building plots formed. Its virtues were the definite leading up to a centre, and the interest which each part derived from being a portion of a definite scheme, the easy communication from point to point, and the simplicity of the general framework, which was easily grasped.

Bearing in mind the comparison made of the formal XVIIIth century city with the informal XIVth century one, let them consider in greater detail some of the component parts. We have seen that both plans are alike characterised by an extensive use of places of various sizes and forms. The special characteristic of the mediæval place is the sense of enclosure and the completed frame of buildings which is produced; the shape was indefinite. In the Market Place at Nuremburg, for example, although at first sight there appear to be many roads leading in to the place, and forming breaks in the buildings, it was remarkable how the arrangement of these did, in reality, leave the framework of buildings unbroken. Contrast with this, the modern Max Josef Platz, Munich, where the long straight vista at the side of the theatre broke up the frame of the buildings and gradually destroys any sense of enclosure in this part of the place. The importance of linking up the buildings and producing to some extent a continuity of frame, was, however, apparently recognised in the laying out of the fine group of Renaissance places at Nancy. Where the angles or ends would otherwise have been open, they had been to some extent screened by wrought-iron railings, masses of foliage and semicircular loggie or arched gateways. But the importance of enclosure and linking up of the buildings had not always been recognised in the planning of architectural places, particularly those resulting from what may perhaps be called axial treatment.

The Karolinen Platz, Munich, was another example of the treatment of a multiple road junction, with a central feature on the axis of the various roads, and with definite architectural treatment of the corners, but lacking any sense of enclosure. In such places one was not tempted to loiter: they were apt to be distinctly draughty.

From these, one naturally passed to consider places formed mainly for the purpose of facilitating traffic. Many examples of these might be found in Paris; at points where several roads converge there was usually formed some open space to facilitate the circulation of traffic, and to secure some degree of architectural treatment to the corners of the various streets; the Place de L'Etoile was the largest of these. The German School of Modern Town Planners believe that as far as possible multiple road junctions should be avoided, and each branch street was better brought singly into the main street. The French School of Town Planners considered it advisable to give long, straight, unbroken streets, converging at certain points where the traffic can rearrange itself all at one point, and pass off in many directions.

In connexion with the new St. Paul's Bridge, which will throw a considerable stream of north and south traffic across the already somewhat congested stream of east to west traffic, at the junction of Newgate-street and Cheapside, the authorities should consider whether it would not be worth while to test the circulatory system here.

Not the least interesting type of place is one which they might call the garden place, because it was the one which was likely perhaps to be of most use to us in the planning of town extensions, the part of town planning for which alone powers were given under the new Town Planning Act. The Schloss Platz, Stuttgart, might be taken as a good example of this type, and, in passing, we may use the example also to indicate in some degree the style of garden treatment suitable to places. The breaking up of places with architectural balustrades, fountains, bandstands, etc., in the great majority of cases was a mistake. Such features had their place, but they should never be allowed to interfere with the general breadth and simplicity of effect which is so necessary, and which forms so much more dignified a foreground for the buildings surrounding the place. A plain sweep of grass, crossed perhaps by paved footways where necessary for pedestrians, following the simplest possible lines, with avenues or masses of tree foliage, when properly placed, was generally an effective treatment, and the money spent in so-called architectural embellishments would be usually better devoted to masking one of the street entrances with a gateway arch. Where there was difference in level in the place, broad terraces with balustraded walls enabling portions of the ground to be levelled, might add greatly to the effect. But in garden places, as in gardens, it was necessary to be very clear as to the effect aimed at, and to be very cautious about introducing any mere embellishments which did not form part of a scheme definitely thought out to enhance that particular effect.

Much that had been said of places will apply to streets also. The building up of street pictures was, indeed, a fascinating art, giving scope for endless variety of treatment. When it is desired to provide a route from one point to another, and no obstacle existed nor do the contours of the ground suggest any deviation, the obvious course would seem to be to adopt the straight line. The advantages of the straight street were that it lent itself to the production of vistas, that where suitable terminal buildings can be provided at distances not too great, these buildings could be very well seen, also the straight street afforded conveninent building sites, and all the many conduits, tramways, etc., which formed part of the engineering work of a modern town street, are more easily laid in straight lines. The disadvantage of the straight street was that it was liable to become monotonous. The Rue Soufflot, in Paris, leading up to the Pantheon, was a good example, in which the terminal feature was of sufficient importance and interest. The length of the street was not great, and the whole forms a dignified and beautiful street picture. But where a considerable terminal feature is lacking, and where the length of the street is great, the long converging lines of windows, cornices, etc., became not only uninteresting, but wearisome. The advantages of the curved street were that it could be more readily adapted to the usually undulating surface

of our sites, and that there naturally sprung up along it an ever-varying street picture. In Oxford High-street it would be found that the concave side of the street was the one that chiefly added interest and variety to the picture, and the curved street was apt to lose on its convex side in proportion to the gain on the concave. But it must not be supposed that a beautiful result necessarily followed from a curved street; there must be sufficient unity of effect and emphasis at the right points. There was ample place in our town plans both for curved and straight streets, but their use should be governed by some definite purpose, and some definite effect in each should be aimed at so that we may neither carelessly continue our straight lines regardless of contours, nor imagine that we shall get a good effect by adopting aimless wiggles, merely for the purpose of avoiding straightness.

In the actual planning of roads and streets we could not think only of the architectural effect to be produced. Rather, we must first think of the utilitarian purpose that the street has to serve, and find in each case such a treatment as will within the prescribed limits afford an opportunity for beautiful architectural expression of these particular requirements. Under the new Town Planning Act it was in the ever-growing residential areas around our towns that the chief opportunity would be afforded. Centres of considerable magnitude and having buildings of fair importance will need to be provided, where whole new suburbs are growing up on the outskirts of towns; and to these the principles which they had been gleaning from the examples of different styles and periods would be as applicable as they are to those central portions of towns which are not affected by the new Act. But in all streets alike, whether residential or otherwise, they must consider the total effect first, and the individual buildings as units contributing to that total effect. Much may be done by the careful designing of the building line to give to each street some definite character and unity, and this may be further emphasised by the adoption of definite building materials for definite streets or areas, a common roofing material being of itself enough to give a considerable degree of unity to a district.

He wished to suggest that fine city building, which was, after all, the end and aim of the art of town planning, was essentially a co-operative art, and, indeed, the art of architecture itself was very much more a co-operative art than many people seemed to think. It was more and more necessary to bring to bear upon even our individual buildings types of skill and ability seldom all united in one man, and our offices were really much in the nature of guilds turning out work which was the result of a high degree of co-operation between the principal and the assistants working with him. In the same manner, fine city building could only result from a high degree of co-operation between all the architects working on the individual buildings. Something might be done on limited areas and on private estates, as at Bedford Park or Hampstead, for example, to produce unity of effect by bringing all the buildings under the controlling influence of the ideas of one man, whose attention was centred on the whole effect, rather than on the individual buildings; but these were, after all, makeshift methods. Art was not a thing easily to be controlled, and unity of effect in a whole town could only be expected when the whole of its architects were joined together by some common aim, some common appreciation of the whole effect which was being worked up to.

Mr. Ellis Marsland, in proposing a vote of thanks, said he thought that one of the finest suggestions for town planning was the existing arrangement of the city of Vienna, which was a modern town grafted on to what was there before. Such must be the case to a large extent in England, for there were few opportunities of designing a new town, and they would have to develop towns something after the manner in which Vienna had been developed. The lecturer had spoken of a sense of enclosure in places; he did not think the idea of a platz should be a sense of enclosure—at any rate in their larger towns; but rather that they should be designed with a view of facilitating the traffic at congested places and for linking up streets from one part of the town to another.

Mr. E. C. P. Monson seconded the vote of thanks, and said it was necessary in preparing a scheme for the housing of the working or middle classes that they should have good healthy homes built on hygienic methods and regularly appointed, so that they got the very best for their money on the cheapest possible terms.

Mr. F. Litchfield (Secretary, Co-Partnership Tenants, Ltd.) said, as to garden cities, one difficulty was to get people to subscribe the money necessary for such schemes. As to architects not all agreeing with what had been done at Hampstead, he would suggest that those architects should meet together and formulate some scheme for a garden suburb, improving upon what had already been done. To bring about a better state of housing they wanted about three million houses, and of the Government three hundred million pounds, of which architects would get their share. They relied upon architects to help forward the movement by properly studying the question and dropping the individualism which had existed in the past, and also by forming great co-partnership societies. They wanted in the next seven years or so to have at least ten such places as the Hampstead Garden Suburb built on the edge of London. He thought that the new means of transit were going to reform London.

Mr. Stewart said he thought that surveyors, from their greater experience in dealing with large areas, were better fitted than architects to take an active interest in the matter, as an architect's work was usually confined to individual buildings.

Mr. F. S. Chesterton said the danger of individuality was great, and an architect would feel some resentment in being ordered to build such and such a house here and such a one there.

The President put the vote of thanks to the meeting, and it was heartily agreed to.

Mr. Unwin, in reply, said, as to Mr. Stewart's remarks, he thought it was a case where architect and surveyor should both work in co-operation. The particular branches of the work which fell to the engineer and the surveyor were branches which could be scientifically determined, and formed part of the conditions within which the artistic creation must work. He regarded every town plan as primarily an artistic creation. Each had to work within his limits. The surveyor might decide the levels, contours, and so on, but to get real architectural expression in their streets they must leave the architect complete freedom, because although there were exceptional men in the engineering and surveying professions, the architect's combination of training taught him how to visualise a street picture and to realise what groups of buildings growing up along certain lines really meant. Seen about a town were groups and masses of buildings, distribution of buildings, building lines and building skylines, and that was why he pointed out the importance of first plotting out their buildings, when they would probably be able to work in their street lines and build up a very much better picture. He agreed that there was a serious danger of loss of individuality, against which they must very carefully guard, but he did not think that was a sufficient reason for not going on with the work. What they had to do was to define the limits within which individuality might work. It was only a question of time, co-operation, and good feeling between the individual architect and the town planning architect for good results to be obtained.

The meeting then terminated.

MAGAZINES AND REVIEWS.

IN the *Art Journal* Mr. C. O. Murray writes on "A Spanish Sketching Ground," this being the curious old town of Pasajes, on the northern coast of Spain, with a double name, one side of the town being called San Juan, the other San Pedro. As to its interest as a sketching ground, in an architectural sense more especially, Mr. Murray's sketches leave no doubt. So much has been sketched everywhere, that a new and picturesque town is a godsend. Mr. Hooper continues his article on "Coffers, Chests, and Caskets." A wrought and pierced steel one (French) is an unusual example, but not very beautiful; a box covered with needlework (German) is another rather out-of-the-way piece of coffer design. But the Italian examples keep the lead, in refinement and suitability of treatment. In "Nature Study with the Camera," by Mr. A. L. Baldry, the author admits that theories as to the extent to which photography may be regarded and treated as an art have no place in nature studies, the object of which is accuracy—exactness of representation; a more rational use of photography than the effort to make photographs look like pictures by special manipulation; an effort, besides, never really successful.

The most interesting article in the *Burlington Magazine* is that by Mr. Paul Lafond on Damian Forment, the Spanish sculptor of reredoses and other church art in the early Renaissance period, who appears to have been an opponent of Italian influence, and long studied to retain in his work especially Spanish character. Two of his rich and sumptuous altar-pieces, both from churches in Saragossa, are illustrated; magnificent work in regard to general effect at all events; the scale of the illustrations is too small to give any idea of the detail.

The *Architectural Record* (New York) is an unusually interesting number. "A Question of Public Architecture" is a criticism aroused by the accepted (and already commenced) design for the Education Building at Albany, in which the architects, Messrs. Palmer & Hornbostel, have adopted a columnar classicism as absolute as that of the Madeleine, against which Mr. Montgomery Schuyler, the author of the article, protests, and we think with reason, as an entirely backward step; a brilliant academic study, irrelevant to any needs of modern man, and which he regards as the outcome of the emphasis laid on pure classic design in the buildings of the Chicago Exhibition.

> "But the State cannot afford to repeat in Albany for a permanent purpose what was done in Chicago for a temporary purpose, by doing it in any other than a classical and monumental fashion. It seems that, owing to the natural discrepancy between the architect's ambition and the State's appropriation, and to bring the former within the latter, the design, as at present proposed and partly executed, contemplates the erection of the columns of the colonnade in drums of marble, but of the capitals in terra-cotta. Most clearly, that would disgrace the State."

Mr. F. S. Swales contributes an article on "The Influence of the Ecole des Beaux-Arts upon Recent Architecture in England," an influence which is perceptible to a certain extent, but is a good deal over-estimated in the article. Where this influence is most decidedly recognisable in London, it is in the buildings of a firm one of whom is a Frenchman, which is therefore hardly a case in point. "Impressions of Budapest," by Mr. Meyer, brings together a large number of illustrations of the architecture of this stately modern city. "A Novelty in Design for Leaded Glass," by Mr. Kenyon Cox, illustrates a method of making window designs in white or in monochrome glass, in which the lead joinings are worked so as to form a design as if drawn in line, the leads standing for what would be the lines in a pen-line drawing. The two designs

illustrated to show the effect, look very well, and the system is worth consideration.

The *Architektonische Rundschau* has an article on "Alte Stadttore"—old municipal towers, with a number of sketches of very interesting examples of this class of ancient building. There is a fine coloured plate of an old street in Leonberg, with a round tower in the foreground.

The most interesting thing in the *Berliner-Architekturwelt* is the bridge with classical columnar screens and approaches at Charlottenburg. The architect, Herr Schaede, has owed something to the Champs Elysées bridge at Paris; of course the work does not show the same refinement of detail as the French example, but it is stately and effective.

To the *Antiquary* Mr. J. Oxley contributes an article, with four illustrations, on the interesting building known as St. Bartholomew's Chapel, originally part of St. Bartholomew's Hospital, near Oxford, which has been turned into farm buildings, though it is said that the chapel itself is now to be treated for restoration to its original use. Mr. Charles Dawson's short additional notes on the restorations in the Bayeux tapestry are important as to some contested features in the restoration.

In *Concrete and Constructional Engineering* Dr. C. H. Desch gives the results of column and beam tests conducted for H.M. Office of Works in connexion with the General Post Office extension. Twelve columns were tested, ten of them reinforced by four longitudinal rods and transverse wire links, and two with lateral reinforcement of expanded metal, all the columns measuring 9 in. square by 72 in. long. The ultimate load for the ten columns varied from 85·2 to 107·5 tons, according to the distance apart of the ties, the highest results being obtained when the wires were 6½ in. apart throughout the greater part of the length and 3 in. apart near the ends. The two columns with expanded metal binding failed at 73·1 and 76 tons owing to spreading of the mesh. Taking the maximum resistance in each case, we have 3,000 lb. per square inch for the columns reinforced by rods and wire links, and 2,100 lb. per square inch for the columns with expanded metal binding. As the writer remarks, these results emphasise the importance of adequate lateral reinforcement for concrete columns.

In the *Illuminating Engineer* is published the presidential address of Professor S. P. Thompson to the Illuminating Engineering Society. The lighting of buildings, especially school buildings, is discussed in this address. We agree with much that Professor Thompson says on this subject, but it will require more than a few words of ridicule to satisfy us that the Board of Education regulation (1907) that skylights cannot be approved in schoolrooms or classrooms is foolish. The professor says that the regulation is "perfectly monstrous," and ought to be at once repealed. He says that for the textile industries it has been found that no method of lighting is so satisfactory as skylights constructed to receive light from the northern sky. In our opinion this fact does not prove that the provision of skylights is the best method of lighting schoolrooms.

The *Contemporary Review* contains an article by Mr. March Phillipps on "Gothic Architecture in Italy," of which the main object is to argue that Italian Gothic was not, and was not meant to be, a partial and unsatisfactory imitation of the northern styles, but was governed by the rationalising principle in the Italian mind, which desired breadth as well as height. The article is worth the attention of architectural critics, and there are some very good remarks in it; but it does do away with the fact that Italian Gothic is rather a falling between two stools—an assumption of Gothic style in detail without its leading and informing element. The fact seems to be that the classic type of architecture, in one form or another, was natural to the Italian mind, and the Gothic type was not, and was never satisfactorily treated in Italy. Mr. Phillipps introduces a new reasoning on the subject, a new point of view, but it hardly alters the facts.

The *Nineteenth Century* contains an article by Mr. E. McCurdy on "Leonardo da Vinci as Sculptor," no doubt prompted by the present controversy in regard to the wax bust, though there is no special reference made to that subject. There is a good deal of information given in regard to Leonardo's works in sculpture, and also as to expressed opinions on the subject. It is curious to note that he left on record a most decided opinion that painting was a more intellectual art than sculpture, and seems to have somewhat disliked the latter art also in consequence of the physical labour it involved, at a time when great sculptors hewed their own marble instead of having the hard work done for them from a clay model.

In the *Century* Mr. Robert Hichens, who so thoroughly understands the feeling of the East, writes a brilliant and picturesque article on "Baalbec, the Town of the Sun"; it is interesting to see the effect produced by these great ruins on the mind of a gifted writer who is not an architect, and who regards them from other than the purely architectural point of view. There is a fine chromolithograph illustration of the six columns of the Temple of the Sun as seen in the half light of an Oriental night. "The Song of the Stone Wall," by Miss Helen Keller, is a poem on the associations of beauty and interest connected with an ordinary stone wall and its materials and their geological history. It is the first time we have seen a wall treated in poetry, and the lines are worth reading. The author is, we presume, the lady who has so wonderfully fought against and overcome her natural affliction in being without either sight or hearing, a consideration which gives an added interest to the poem.

In *Scribner* Mr. Weitenkampf writes an article on "Some Women Etchers"—American women, we presume. Of the examples given the outline dry-points of two groups of mother and infant, by Miss Mary Cassatt, are the most remarkable; but there is a fine landscape etching by Mrs. Moran. Under "The Field of Art" Mr. Frank Fowler contributes a good article on "Portraits as Decoration," the main point of which is that portraits might be arranged and grouped so as to constitute a form of mural decoration instead of being placed on a wall separately and with no relation to the others or to the architecture. On this head he says:—

> "It is the custom of banks, hospitals, universities, schools of medicine, and public buildings such as city halls, state houses, and federal halls, to collect portraits of their representative leaders, whether known as presidents, directors, benefactors, or originators of measures which have marked them in some special way as friends of the institution or of the State. These individuals are commemorated frequently enough in these various organisations, by portraits that tend to keep their memory green. How are these portraits placed? Do they serve any æsthetic purpose? None whatever—but they may do so. Would not these buildings gain in dignity and beauty if the portraits were given a mural setting that contributed to the enrichment of the halls and chambers of the structure?"

As an example he gives a view of the Gallery of Apollo, at the Louvre, with the portraits framed in permanent panels in the wall design.

The *National Review* contains a very interesting article by Mr. Austin Dobson on the life and work of Madame Vigée Lebrun, the eminent French lady artist of the Revolution and Empire Period.

IMPROVEMENT SCHEME, MATLOCK BATH.—A special meeting of the Matlock Bath District Council was held recently to consider tenders for the erection of a kursaal and pump-room, to complete the 50,000*l.* improvement scheme carried out by Act of Parliament, including promenades, pavilion, concert hall, a pump-room for the development of the thermal mineral spring, and generally to bring the Spa up to date. A tender by Messrs. W. Ford & Sons, of Derby, was accepted at the sum of 8,694*l.*

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1909.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1909. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Hackney, South.—Buildings on the southern side of Lea Bridge-road, Hackney (Messrs. S. Walker & Son for Mr. J. J. Griffiths and the Great Eastern (London) Motor Omnibus Company).—Consent.

Kensington, South.—Retention of a projecting sign in front of No. 9, Young-street, Kensington (Mr. J. W. Lawson).—Consent.

Kensington, South.—A conservatory over the porch at No. 13, Brechin-place, Kensington (Mr. F. E. Williams for Mrs. N. Harris).—Consent.

Lewisham.—Permission to retain a building on the western side of Lewisham-road, Lewisham, northward of No. 170 (Mr. A. Dixon for Messrs. Whitbread & Co., Ltd.).—Consent.

Lewisham.—A greenhouse in the grounds of Friern Lodge, on the southern side of Westwood Park, Forest Hill (W. Cooper, Ltd., for Mr. C. H. Wells).—Consent.

Marylebone, East.—An iron and glass hood in front of No. 84, Harley-street, St. Marylebone (Mr. C. W. Ferrier for Messrs. Higgs & Hill, Ltd.).—Consent.

Marylebone, East.—One-story buildings on the northern side of Wellington-place, and the eastern side of Wellington-road, St. Marylebone (Messrs. Wright & Co. for Mrs. E. Wright).—Refused.

Wandsworth.—Retention of a building on the south-western side of Rosendale-road, Wandsworth (Mr. A. Griswood).—Consent.

Width of Way.

Greenwich.—A one-story addition at the rear of No. 132, Trafalgar-road, Greenwich, at less than the prescribed distance from the centre of the roadway of Fenton-street (Mr. J. Rowland for Mr. J. Smith).—Consent.

Westminster.—A building on the eastern side of Wilfred-street, Westminster, southward of the Pineapple public-house, at less than the prescribed distance from the centre of the roadway of the street (Messrs. Barlow & Roberts).—Consent.

Line of Frontage and Construction.

Hackney, South.—The retention of two wood and iron sheds of a temporary character at No. 53, Chatsworth-road, Clapton, abutting upon the northern side of Glenarm-road (Mr. A. Demant for Mr. G. Beyer).—Consent.

Rotherhithe.—The construction of an iron gangway over the public way of Bermondsey-wall, Rotherhithe, at the premises of Messrs. C. Southwell & Co., Ltd. (Mr. W. T. Walker for Messrs. C. Southwell & Co., Ltd.).—Consent.

Width of Way, Frontage, and Construction.

Kensington, South.—An advertisement board on the forecourt of No. 6A, King-street, Kensington (Mr. F. E. Williams for Messrs. Derry & Toms).—Consent.

Width of Way and Space at Rear.

Whitechapel.—A building, to be inhabited by persons of the working class, upon a site on the eastern side of Glasshouse-street, Whitechapel, to abut also upon the northern side of Shorter's-rents (Mr. W. E. Wallis for the Governors of the Peabody Donation Fund).—Consent.

Formation of Streets, Width of Way, and Lines of Frontage.

St. George, Hanover-square.—Re-erection of Victoria District Railway Station buildings, to abut upon Victoria-street and Terminus-place, St. George, Hanover-square (Mr. G. Sherrin).—Consent.

Uniting of Buildings.

City of London.—The formation of openings on the first and third floor levels between Nos. 17 and 18, St. Paul's-churchyard, City (Messrs. North & Robin for Mr. W. Shepperd).—Consent.

City of London.—The uniting of Nos. 38 and 40, Golden-lane, with No. 22, Golden-lane, City, at the basement and ground floor levels (Messrs. J. Hamilton & Son for Messrs. Sutton & Co.).—Consent.

City of London.—The uniting of Nos. 6 and 8, Gresham-street, City, at the first and second floor levels (Messrs. Batt & Hart).—Consent.

Finsbury, East.—The retention and formation of openings in the division walls between (i.) Nos. 7 and 9, Old-street and a new warehouse at the rear, in the basement; (ii.) Nos. 7 and 9, Old-street and No. 15, Old-street, on the first, second, and third floors; and (iii.) No. 25, Old-street and a warehouse at the rear, in the basement and on the ground floor (Mr. H. O. Ellis for Messrs. R. Moreland & Son, Ltd.).—Consent.

Marylebone, East.—The formation of two openings larger than specified in the said section in the division wall between Nos. 83 and 84, Wells-street, St. Marylebone, such openings to be fitted with steel revolving shutters (Mr. A. Sykes).—Consent.

Strand.—The uniting of No. 126, Strand, and Devereux-chambers, at the second and third floor levels (Mr. P. Todd for Messrs. R. Twining & Co.).—Consent.

Whitechapel.—The uniting of Nos. 68 and 70, Middlesex-street, Whitechapel (the Trustees of the late James Hartnoll).—Consent.

Architectural Societies.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

At a meeting of the Society last week, Mr. Butler Wilson delivered a lecture on "Cuthbert Brodrick," the architect of the Leeds Town Hall. In a comprehensive survey the lecturer touched the salient features of a remarkable career. Born at Kingston-upon-Hull in 1822, Brodrick was in 1837 articled with Mr. Lockwood, architect, of that town. On the expiration of his articles he visited the Continent for purposes of architectural study, and spent much time in Italy, whence he derived inspiration for his subsequent work. It was at Rome in 1844 that he first met the late Mr. H. B. Garling, who was, it appears, an intimate friend of Brodrick. Upon his return from his "grand tour" in 1845 he commenced practising on his own account, and in 1852 obtained the commission for the Philosophical and Literary Society's buildings in Hull, this being his first important work. In 1853 he was instructed to proceed with the plans for the town hall to be erected in Leeds, his design having been placed first by the assessor, Sir Chas. Barry, in a competition in which he defeated his late master, Lockwood. This building, although one of his earliest works, reflects, perhaps, more of his genius in its bold handling of the grand classic manner than any other, and it is noteworthy in that it has provided the *motif* for at least three other town halls—those of Bolton, Morley, and Portsmouth. Other examples of his work are the Leeds Corn Exchange and Institute—the latter a monumental treatment of a small front—Hull Town Hall, the Wells House on the Ilkley Moors, and the Scarborough Grand Hotel. With Barry, Street, Owen Jones, Penrose, Cockerell, and others, Brodrick was invited to submit designs in the ill-starred National Gallery Competition, while his design for a New Custom House at Bombay, to involve an outlay of 270,000*l.*, was placed first, a distinction for which he received 3,000*l.* from Lord Palmerston's Government, as the project was never realised. Elected a Fellow of the Royal Institute of British Architects in 1870, he became a member of the Council of that body in 1874. The lecture was illustrated by a series of eighty lantern slides and a collection of original drawings by Brodrick, many of which were exhibited for the first time.

The next general meeting of the Society will be held on Thursday, January 13, when Professor S. D. Adshead, of Liverpool University, will read a paper on "Town Planning."

NORTHERN ARCHITECTURAL ASSOCIATION.

At the second ordinary meeting of the session held on the 8th inst. Mr. John W. Simpson read a paper, entitled, "With Share and Mattock." "I 'a stubb'd Thurnaby waäste."—(Tennyson—"Northern Farmer.") In his introductory remarks Mr. Simpson said that these words of the Northern Farmer suggested so well the quiet, dull task which architects have to accomplish that he commended to those present the merits of the ploughshare and the hoe. "There has been and still remains," continued Mr. Simpson, "much waste land to 'stub'; ungenerous ground rendering slow return to the courageous labour which is ever breaking it to husbandry and keeping down the growth of evil weeds." Likening the everyday business of the profession to "Thurnaby waäste," and the task of the Royal Institute and allied societies to its "stubbing," Mr. Simpson dealt with some of the multifarious duties with which the Institute is charged on behalf of the profession, and reminded his hearers that much of the work of the committees and of the Council is necessarily done in private, and because of its quiet success is not much heard of. In his concluding remarks Mr. Simpson said, "The Royal Institute is not a trades union; it is not a weapon to use against our clients, but rather an instrument to encourage and confirm their confidence in us their advisers. The true question then for its members to ask, and indeed for all architects desiring more than their own selfish ends, is not 'What has the Institute done for me?' but 'What have I done for the Institute?'"

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

The work which is being carried on by the National Trust for Places of Historic Interest or Natural Beauty was described before the members of the Sheffield Society of Architects and Surveyors at the Sheffield University on the 10th inst. by Mr. Nigel Bond, M.A., Secretary of the Trust. He said that this country possessed a great mass of beautiful landscapes and beautiful architecture, but in diminishing quantity, and it was felt that in the interests of the nation that as much as possible should be done, without interfering unduly with other interests, to preserve that beauty. The Trust also stood for other interests besides the æsthetic and the architectural. There were existing many good examples of that continuity which showed how one event glided, so to speak, into another, and went forward without any great breaks. To preserve the evidences of that continuity could not fail to be of great educational value, as it enabled us better to judge the most important political issues which arose from time to time. It was important that historical buildings should be preserved to help us to remember and appreciate what had gone before, and understand it better. Hence the Trust was preserving not natural beauty alone, but also historical associations, and anything which tended to the development of historical knowledge. The Trust covered very wide ground. In fact, there was no æsthetic or intellectual interest which did not find sympathy in it. The views thrown on the screen included some Lake and Devon scenery.

EDINBURGH ARCHITECTURAL ASSOCIATION.

A meeting of the Edinburgh Architectural Association was held on the 8th inst., when Mr. F. Morley Fletcher, Director of the Edinburgh College of Art, delivered a lecture in the Association's Rooms, George-street, Mr. John Watson presiding. The subject of the lecture was "Materials and Treatment in Wall Decoration." The lecturer inquired into the reasons of the lack of any great modern school of wall decoration that would bear comparison with those of the great masters of the past, and suggested that the conditions of our climate and national life called for a different character of decoration, or that the reason might be simply that a proper technical method had not yet been found that would satisfy the conditions imposed by our humid climate and the impure atmosphere of our cities. He stated certain established principles, and emphasised the principle that however elaborate the enrichment of a design might be the sense of illusion should never be given to an extent that would appear to destroy the flat surface of the wall. He described and compared the methods of modern decoration as shown in the decoration of the Pantheon in Paris, the Boston Library, the lunettes by Lord Leighton at South Kensington, and the decorations carried out in Edinburgh by Mrs. Traquair. Some examples of the modern revival of fresco painting were shown and criticised by the lecturer, who said their element of failure was their inability to resist the dangers of our climate by reason of their exposed surface, and their liability to decomposition owing to the acidity of a city atmosphere. He stated that Professor Church, in examining the exterior limestone of St. Paul's Cathedral, found the limestone to be changed to sulphate of lime to a depth of ¾ in. by the action of sulphurous acid in air and rain. In recommending as an experimental method an impervious ground of zinc white, and the complete protection of the painted surface by means of varnish and a renewable coating of wax, as more suitable than fresco to our climate and conditions, he emphasised the necessity for retaining and using the luminous power of the wall and for avoiding loaded lights. Examples of classic work were shown and compared with modern work of various types, by means of lantern slides, and other reproductions of wall decoration.—On the motion of Professor Baldwin Brown, seconded by Mr. W. T. Oldrieve, Mr. Morley Fletcher was awarded a vote of thanks for his address.

ABERDEEN ARCHITECTURAL ASSOCIATION.

The fourth ordinary meeting of the Association was held in the Northern Arts Club on Saturday last, Mr. J. B. Nicol, President, in the chair. Mr. Hugh R. Barr gave a lecture upon "Reinforced Concrete." He reviewed the characteristics of the principal materials used in making concrete, and showed by means of tables how the strength of the concrete depended upon the choice of suitable materials and the selection of suitable proportions. The strength of concrete in compression, tension, shearing and adhesion was considered, and the safe stresses were stated. The influence of the amount of water used in mixing, and of the thoroughness of the ramming was then dealt with, and the necessity of thorough care and rigid inspection was emphasised. The lecturer then referred to the properties of steel, and showed the advantages of combining concrete and steel in the form of reinforced concrete. The nature of the stresses in beams and cantilevers was next considered, and diagrams were shown of the bending moments, shearing forces, and the intensities of the tensile and compressive forces. This led up to the necessity for reinforcing plain concrete and to the usual methods of placing the reinforcements in beams, the various ways in which a reinforced concrete beam may fail being referred to. The second portion of the lecture described some half a dozen well-known systems of reinforcement. The lecturer divided these into systems, such as the Hennebique, Considère, and Coignet which use ordinary plain rods, and systems using reinforcement of a special section of which the Kahn, the patent Indented Bar, and the expanded metal systems are examples. Each of these systems was illustrated by means of numerous lantern slides, showing the peculiarities of each, and numerous examples of structures which have been erected.

The President announced that the Sketch Book Committee, of which Mr. George C. Irvine was editor, had at last concluded its labours, and the Sketch Book had become an actual fact. Mr. Irvine showed the proof copy, and great satisfaction was expressed with the contents and appearance of the book.

NOTTINGHAM ARCHITECTURAL SOCIETY.

The first meeting of the Designing and Discussion Club connected with this Society was held on Tuesday evening, the 14th inst., at the Society's Room; the President, Mr. A. Ernest Heazell, in the chair. The subject set by the visitor, Mr. W. R. Gleave, was "A Design for Tea-Rooms in a County Market Town." After the criticism a discussion, in which the students took part, followed.

THE ROYAL SANITARY INSTITUTE.

A MEETING of the Royal Sanitary Institute was held on the 8th inst. at No. 90, Buckingham Palace-road, when a discussion took place on "The Collection and Disposal of House Refuse," Mr. H. Percy Boulnois, M.Inst.C.E., presiding.

Mr. J. S. Brodie, Borough Engineer, Blackpool, who opened the discussion, referred to the importance of the subject and to the legal powers in existence, remarking that there was cause for satisfaction in respect of the powers the Legislature had conferred upon them. As to the nature of house refuse, he said that the cost to the authority of removing offensive matter was insignificant compared with the advantages to the community of rapid and efficient removal, and he was convinced that public authorities would find it ultimately a financial advantage to do much more in this matter than the mere letter of the law might require them to do, and that most, if not all, the miscellaneous articles which found their way into the dustbin should be removed by the local authority without extra or special charge.

In reference to the collection of refuse, he said there were only two satisfactory methods, *i.e.*—(1) house-to-house calls, at appointed and regular times, once every weekday, between 6 and 8.30 a.m.; (2) house-to-house calls weekly or semi-weekly, also at appointed and regular times and days, between 6 and 8.30 a.m. It was essential that one or more portable covered galvanised iron ashbins, of about 2 to 3 cubic ft. capacity, should be provided for each household, and that the old ashpits, whether open or covered, should in all new property be prohibited, and, where existing, should be done away with as soon as possible. The collecting vehicles should in all cases, whether carts or vans, be covered in, so that the contents, which were almost always light and easily disturbed by the wind, could not be blown about and scattered while in transit to the place of disposal. They should also be made on the tip-up principle, for easy discharge of their contents. He wished especially to emphasise the point of keeping the collecting carts or vans reasonably clean, with frequent cleansing with a hose-pipe and brush, as nothing was more incongruous than a dust cart or van bearing the name of a public sanitary authority and itself a moving mass of dirt and filth. It was to be hoped that the old methods of disposal, by dumping refuse in disused quarries or clay-pits, or other waste lands on the unbuilt-upon areas, or even on tidal foreshores in the local authority's district, were now almost, if not entirely abandoned. There was at present only one really efficient method of disposal, except in the case of a few seaside districts, where disposal by dumping from hopper-barges far out at sea, might be successfully adopted, at least, for a time. The conversion by heat of house refuse into a useful product was at once most efficient, satisfactory, and economical. This conversion could be attained by most of the many refuse destructors now in use. The essential conditions in respect of a successful refuse destructor were:—

1. That it should be reasonably central for the district or subdistrict whose refuse it was to dispose of.

2. That is should thoroughly and perfectly convert all organic matter in the refuse, by combustion, into an inorganic form, at once inoffensive and useful.

3. That it should not itself be a nuisance or injurious to the neighbourhood in which it was situated.

Any destructor that fulfilled these three conditions was a success, whatever its financial results might be.

One of the most important points to be kept in view in the collection and disposal of refuse was that it should be handled as little as possible. The ashbins, after being filled by the householders, should have their contents discharged direct from the bins into the collecting vans. Also the contents of the collecting vans should be discharged direct into the cells of the destructor. Then the red-hot clinker in the destructor furnaces should be discharged direct into iron conveyors to the cooling platforms. From the latter the cooled clinker should be sorted out by machinery for the various purposes for which it was intended. Then the constituent parts of house refuse could, under reasonably careful management, be so utilised as to be a useful set-off against the cost of collecting and burning, although he thought it could not yet be said of any disposal plant that it was really self-supporting. It should be steadily kept in mind that the first object of a refuse destructor was to destroy noxious refuse, and the more thoroughly and perfectly that object was accomplished, the more beneficial would be the results to the authority.

Mr. Brodie then dealt at some length with the collection and disposal of house refuse in the Borough of Blackpool.

A general discussion followed.

Competition News.

WATERFORD PARISH CHURCH INSTITUTE.

The plans for the new parish hall and church institute at Waterhead have now been approved by the Committee. The successful plans were those of Mr. C. T. Taylor, architect, Oldham. The building will cost over 1,000*l.* The ground will also allow of a large-sized tennis court. The work of building the institute will be commenced in the spring of next year.

Correspondence.

PROFESSOR HAMLIN'S LECTURE.

SIR,—As one who had the privilege of listening to Professor Hamlin's interesting paper upon American Architectural Education and who could not venture to add to the length of a protracted meeting by any comments, may I beg for an opportunity for one or two remarks upon this important subject?

Probably the most salient fact which was laid before us was the breadth and scope of American education not only in design, which is naturally the chief element of such studies, but also in the no less neecssary adjuncts of successful architectural work, the training in technology and the principles which underlie the many practical problems which present themselves in the successful design of a building of any magnitude.

As the lecturer had the misfortune to be without his data as to the time allocated to various subjects at different periods of study, may I venture to refer to some facts which I presented in the same room five years ago, showing the amount of science which then entered into the curricula of five American and eleven other institutions in different parts of the world, and which showed that in scientific training as a basis for technical knowledge, we, in this country, were much behind other institutions abroad. As it is often advanced that a student has no time for such matters, it would be interesting to ask how he obtains time for such work elsewhere, and if his ability in design is inferior to that of our students here, as a consequence of such technical study.

I had great gratification in listening to the comments of one speaker on the necessity for technical knowledge, which, coming from one in such close touch with things artistic, were especially cogent, and I should like to dissociate myself from the views of two eminent speakers, one of whom, though engaged in a technical work of great magnitude and importance, made the surprising admission that he relegated matters outside the sphere of architectural design to firms of specialists; the other, who, though his literary attainments vie with his artistic abilities, expressed his disbelief in the association of architectural studies with a liberal education. That these gentlemen, both of whom are connected with our sister Universities, should have expressed themselves in this manner appears most lamentable, more especially as at the present time one, at least, of these centres of learning is endeavouring to interest its students in architecture with what should result in immense gain to the profession.

Surely no better antidote can be found to the apathy of the public, of which we so often complain, than encouragement, not only to our Universities, but to our schools, not to attempt to train architects, but to awaken an interest in architecture and to supply students with such a basis of scientific training as shall enable them subsequently to master in an intelligent manner the many practical and highly technical problems the solution of which is essential to the successful fruition of all our material artistic conceptions.

ALAN E. MUNBY.

WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on December 9, the following, amongst other matters, were dealt with:—

Drainage By-laws.—In reply to the London County Council's circular with reference to the Police Court decision in the case of Kershaw *v.* Brooks, it was decided to inform the County Council that the City Council were of opinion that a new by-law should be made definitely providing that the builder or contractor should be responsible for any infringement of the London County Council drainage by-laws.

Rebuilding of District Railway-station.—The Works Committee reported having received plans, submitted by Mr. Geo. Sherrin on behalf of the railway company, with a letter to the City Engineer, showing an amended proposal for the rebuilding of the station. The amended proposal is to build over a total area of only 380 sq. ft. of the recessed portion of the footway at the Victoria-street entrance, and to leave open as a public highway an area of about 700 sq. ft. The proposal also includes the straightening of the building line in Terminus-place, involving small areas being taken from and added to the public way.—Approval was given to the plan.

Memorial Fountain.—Following on the Council's decision refusing to consent to the placing of a cattle drinking-trough in Whitehall, in memory of Lady Leigh, the Secretary of the Metropolitan Drinking Fountain Association wrote stating that Lord Leigh desired to present a very handsome structure, possibly similar to the Grosvenor trough in Park-lane, and would be pleased if a site could be allotted in Belgrave-square. The Association further offered on behalf of Lady Banbury to erect a drinking fountain somewhere near the middle of Eaton-square. It was decided to inform the Association that while appreciating the offers the Council did not see their way to entertain the proposals.

Disinfecting-station.—On the advice of Mr. John Murray, the Council's Architect, it was agreed to accept the tender of Messrs. Goddard, Massey, & Warner for the engineering work at the disinfecting-station, Grosvenor Canal, the work to be done in accordance with the specification of Mr. Murray.

LONDON AND DISTRICT BOROUGH COUNCILS.

Barnet.—Hadley Grove and Gladsmuir-road are to be made up. Plans have been passed for four houses in Byng-road, for Mr. Anstee.

Ealing.—The Borough Surveyor has prepared plans for two conveniences to be erected at a cost of 550*l.* and 900*l.* respectively.

Finchley.—The following plans have been passed:—Mr. C. F. Day, two lock-up shops and sixteen houses, Regent's Park-road and Rosemount-avenue; Mr. F. J. Matthews, conversion of Wentworth Hall, Ballard's-lane, into cinematograph exhibition; Mr. H. E. Anstee, eight houses, Queen's-avenue; Messrs. Herbert & Tant, four houses, Stanhope-avenue; Mr. C. W. Scott, three houses, Arden-road. Plans have been lodged as follows:—Messrs. Frecker & Co., four houses, Holly Park-gardens; Messrs. J. Freeborn & Sons, ten houses, Squires-lane; Mr. S. J. Hunnings, thirty houses, Ballard's-grove, Woodside-grove, North Finchley; Mr. E. M. Gilbert, twelve shops, Great North-road, near Fortis Green-road.

Friern Barnet.—Messrs. Grounds & Newton are to make up Alma-road, the contract price being 837*l.*, and Mr. William Iles is to make up Bawtry-road, the contract price in this case being 500*l.* Tenders are to be invited for the making-up of Torrington Park and Oakleigh Park roads. Plans were passed as follows:—Messrs. Pilgrim & Sons, seven houses, Oakleigh-gardens; Mr. C. F. Day, six houses, Hillside-avenue; Mr. Spink, alterations to Nos. 14, 16, 18, and 20, Halliwick-road; Messrs. Betstyle, Ltd., three houses, Park View-crescent.

Hammersmith.—The freehold interest of Messrs. Fuller, Smith, & Turner in a strip of land forming part of the Salutation Inn, 154, King-street, and which is required for the purpose of widening, has been purchased by the Council for 1,414*l.* The Council has also, as part of the agreement, approved of rebuilding plans lodged by Messrs. Fuller, Smith, & Turner.

Hendon.—At the last meeting of the Council a letter was received from Messrs. Nevile & Smith, solicitors, in reference to a proposal of clients of theirs to acquire a plot of land in Golder's Green-road, for the erection of a church, and asking for information as to the building line. The Council directed that the information asked for be sent. The following plans were passed:—Mr. H. A. Bernstein, seven houses, Temple-grove, Temple Fortune; Mr. G. Hamblin Fox, seven shops, corner of Station-road and Hale-lane, Mill Hill; Mr.

A. Phillips, six houses, Caddington-road; Messrs. Gordon & Gunton, Wesleyan school, The Burroughs; Gas Light and Coke Company, new stores, Golder's Green-road; Mr. E. Streather, ten houses, Corringham-road, and six houses, Temple-gardens, Golder's Green; Mr. Pine, six houses, Finchley-road, between Ravenscroft-road and Wentworth-road; Mr. E. Wood, six houses, Babbington-road, Hendon; Mr. H. A. Welch, four houses, Corringham-road; Mr. J. M. Josephson, eight houses, Egerton-gardens, Ravensfield Estate; Sir Audley D. Neeld, pavilion for tennis-court, Neeld Estate, Sevington-road, corner of Graham-road; Mr. R. V. Hart, six houses, Wentworth-road.

Poplar.—The Council have passed a resolution approving in principle of 57,000*l.* being spent in the next three years on paving and repairing works, 24,000*l.* to be paid out of revenue, and 33,000*l.* to be raised by loans. The London County Council is to be immediately asked to advance 13,000*l.* for the first year's works, which will be divided between asphalte and granite paving in the proportion of 10,000*l.* and 3,000*l.*

Stepney.—40,500*l.* is to be expended in additional plant for the electricity undertaking; also a substation is to be erected at Wapping Plans have been passed for Messrs. Pearson & Milburn for the re-erection of buildings in Glasshouse-fields, Limehouse.

Master Builders' Associations, etc.

EDINBURGH AND LEITH BUILDING TRADES ASSOCIATION.

The annual dinner of the Edinburgh and Leith Building Trades Association and the Building Trades Exchange was held on the 7th inst. in the Royal British Hotel, Edinburgh, Mr. David Wilson, J.P., presiding.

After the loyal toasts had been drunk, Mr. William Allan, Vice-President of the Glasgow Master Wrights' Association, gave "The Edinburgh Trades Association and Exchange." He stated that there were at present two schools being erected by Leith School Board, and he understood that these schools were being imported from Germany, and not only so, but that the majority of the joiners who were erecting them were actually Germans. This was taking away work which could have been done quite well by British workmen.

In responding to the first part of the toast, the Building Trades Association, the Chairman said there were many examples of German competition in Edinburgh as well as Leith, and he thought something should be done to protect British trade. Local builders had a number of contracts to look forward to, and they hoped that in the future they would be better off than they had been during the last two or three years. Important contracts were those for Rosyth, Redford Barracks, the new Dick College, and the Usher Hall.

Mr. W. Graham Yooll, in replying for the Building Trades Exchange, said they were undoubtedly just now passing through a depression which had existed for some time. It was not only in this country that it existed, but it was common in most of those on the Continent. The building trade in Antwerp, Vienna, Berlin, Brussels, and all over was very much depressed and from the same cause—over-building. They had passed through similar depressions before; they came in cycles, and affected all trades. But they could always look forward to a reaction when things would become better and there would be a revival of trade. It did not matter much which party was in power; it would not affect matters which were due entirely to economic reasons. Regarding local trade, he thought there was every prospect of that getting better. Mr. Allan had mentioned the Leith schools. It had been said that in dealing with the subject he had an axe to grind, but he denied this so far as his personal interests were concerned. He was prepared to admit, however, that as being connected with the building trades he had the same axe to grind or the same interest to serve as every other Britisher had when he saw work that could be done by himself or his friends going away to the foreigner, and that at a higher cost than could be done at home. It had also been said by the Chairman of the Leith School Board that the statements made by gentlemen at a meeting of the Building Trades Exchange were inaccurate. Well, one of the statements that he made was that 40 per cent. of the cost of these schools was going to the Germans. If that statement was inaccurate or untrue, the Chairman of the Leith Board was the author of it and his authority for making it. Then another assertion was that the schools were not highly inflammable. He had taken the opportunity when a Committee of the Association was down looking at them to take pieces from the so-called fireproof lining with which they were constructed away with him. He thought he could prove to the satisfaction of everybody that they were highly inflammable.

Mr. Yooll then exhibited two pieces of the fireproof lining, a thick piece and a thin piece, and in view of his audience set fire first to the one and then to the other. The two pieces continued to burn steadily until blown out by the experimenter.

Continuing, Mr Yooll said he had further experimented with some of this fireproof material, and found that it gave off at a comparatively low temperature an inflammable gas. The schools were costing more than similar British-made schools would have done, and even then they were of ordinary construction.

"The Corporations of Edinburgh and Leith" was given by Mr. Alex. Drysdale, and responded to by Bailie Macfarlane, Edinburgh, and Councillor Bryson, Leith.

TOWN PLANNING.

A NATIONAL Town Planning Conference, convened by the Garden Cities and Town Planning Association, for the purpose of considering the application of Mr. John Burns's Housing and Town Planning Act, was opened at the Guildhall on the 10th inst. Delegates attended from the City of London, the London County Council, fifteen metropolitan boroughs, thirteen county councils, forty provincial boroughs, thirty-five urban district councils, twenty-five professional and propagandist bodies, and many authorities on town planning in England. At the outset the Lord Mayor gave the delegates an official welcome.

Mr. Godfrey Benson (Mayor of Lichfield and Chairman of the Association) presided over the conference.

The Secretary (Mr. Ewart G. Culpin) announced that a proposal was to be submitted for establishing a central body for town planning matters, which by combining the experience of representatives of all sections would be able to render efficient and welcome service to any department or authority. The Association would agree to organise the new body, which would form an effective clearing house of housing and town planning effort and prevent overlapping. He also suggested that the conference should authorise the sending of a message of congratulation to Mr. John Burns on the passing of the Bill. They might not agree with all in the measure, but they were agreed that they had at any rate the beginnings of a new order of things for the beautifying of their towns and the improvement of the life of the people in town and country.

Mr. Thomas Adams opened a discussion on "The Practical Application of Town Planning Powers," and explained in detail the clauses of Mr. Burns's Act. Whereas German town planning led to centralisation, that in England led to garden cities and garden suburbs, and thereby to decentralisation. Local authorities would now be required to consider the important question of protecting the natural features and amenities of their districts together with the further question of providing for the convenience and regulation of traffic. Town planning should result in a great saving to local authorities, and not in increased expenditure. By the economies that could be effected authorities would be induced to carry out schemes. It had been suggested that a weakness of the Act was the absence of compulsory powers, but he thought the opportunity of effecting economies would be a much better inducement than any form of compulsion. When authorities and owners learnt to appreciate the economies to be effected, and the social betterment that would result from carrying out town planning schemes, they might expect great and far-reaching results from the working of that part of the Act.

Mr. J. W. Willis Bund (Worcester City Council) considered that if the legislation had been a little wider and county councils had been included as well as other bodies, the Act would have worked a great deal more smoothly.

Mr. Kirkby (City Architect, Bradford) said the passing of the Act had been a great step forward. It was doing much to prevent the spreading of slums in the suburbs. An important question to be faced was the demolition of large blocks of buildings to provide for the flow of traffic in the great cities, and he recognised the difficulty in that matter. They were not exercising the foresight which Germany had exercised in the matter of buying land for town planning purposes. He thought they should impress upon authorities the importance of buying land for town planning purposes many years in advance, because they did not know how a town would develop and grow.

Professor Beresford Pite delivered an address on "Architecture and Town Planning." He drew attention to the enormous debt London was under to its great landowners. Generally speaking, practically all the garden squares of London where dwelling almost alone was healthy and possible were due to the private enterprise and personal expenditure of individuals who were now described technically as ground landlords. What London would be without its gardens it was difficult to conceive. Its great squares would go down to posterity bearing the names of Grosvenor, Cavendish, and Eaton as monuments attesting to the public spirit and architectural qualities of their original layers-out.

Mr. Raymond Unwin was glad that the Town Planning Bill began at the right end and went direct to the residential areas which were growing up around all large towns. With regard to that point, one thing which needed to be carried further was the reduction of the number of houses which might be put on the average on an acre of ground. The increase of motor traffic on the main roads was anything but desirable for the residences, and that was a problem which must be faced. It was amply provided for in the Bill, and they must face it.

Mr. Platt (Salford) said that when they endeavoured to put into operation in the North of England a scheme like that at Letchworth they were met at once with failure, principally because the climatic conditions prevented the particular spot being beautiful. He suggested that the Local Government Board should give to local authorities more latitude than had been the case in the past.

A resolution was passed advocating the formation of a central consultative town planning body for the purpose of giving advice and assistance on matters connected with town planning, for the better development of towns, and for concentrating work along those lines, with a view to securing effective action and preventing overlapping, such a body to work strickly upon non-party lines in endeavouring to assist in every way possible public authorities and others desirous of obtaining its services, and to consist of representatives of the various professional and other societies interested, together with municipal and other authorities, who shall meet from time to time and make such rules and regulations as they shall think fit. The resolution added that the Association be requested to call together the representatives as agreed upon as early as possible, and to communicate with the various bodies concerned.—*The Morning Post.*

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERDARE.—Mortuary; Borough Surveyor, Town Hall.

Amersham.—The Rural District Council has passed plans for a substation for the Chesham Electric Light Company, Chesham Bois, Mr. H. Kennard.

Ammanford.—Y.M.C.A. buildings; Mr. D. Thomas, architect, College-street, Ammanford.

Bedwellty.—Additions to workhouse; Messrs. Smith & Son, builders, Stratford, E.

Berkby.—Baptist chapel (4,700*l.*); the Trustees.

Birmingham.—New church, Newtown-row. Rev. T. S. Dennison, St. Stephen's, Newtown-row.

Blyth.—School (4,000*l.*); Messrs. Armstrong & Wright, architects, Grainger-street, Newcastle-on-Tyne.

Bootle.—Theatre, Stanley-road (18,000*l.*); Mr. H. Pennington, Pennington Estate Company, Bootle.

Boxted (Essex).—School; Mr. F. Whitmore, architect, Duke-street, Chelmsford.

Bradford. — Additions to Argyle Mills (5,000*l.*).; Messrs. T. Baker & Sons, architects, 15, Bank-street, Bradford.

Bridgwater.—Secondary school; Mr. H. Bryer, builder, Bridgwater.

Bristol.—Adaptation of the Dutch House for occupation by the Macdonald Manufacturing Company, Ltd. Alterations to Fairfield School (614*l.*); Messrs. R. Wilkins & Sons, builders, 20, Bishops-street, St. Paul's, Bristol.

Chatham.—The Town Council has passed plans for Messrs. Style & Winch for a motor-house at Gibraltar Inn.

Colchester.—Tuberculous hospital; Committee of the Eastern Counties Asylums for Imbeciles, Colchester.

Coleraine.—Bank premises; Messrs. Blackwood & Jury, architects, 41, Donegall-place, Belfast.

Dares, N.B.—Manse and offices; Mr. T. Munro, architect, 62, Academy-street, Inverness.

Darlington.—High School (12,000*l.*); Mr. W. Rushworth, architect, Shire Hall, Durham.

Dipton.—Workmen's dwellings (4,000*l.*); Mr. J. E. Davis, architect, South Meadowsley.

Drumoak.—Library (2,000*l.*); Messrs. Walker & Duncan, architects, 3, Golden-square, Aberdeen.

Dumfries.—Skating-rink, Cresswell Park; Messrs. Hay & Thomson, architects, 10, Bank-street, Dumfries.

Dunstable. — Library; Surveyor to the Council, Dunstable.

Elland.—Residence (2,000*l.*); Messrs. Sharp & Waller, architects, Brighouse, Yorks.

Epsom.—Nurses' Home (1,870*l.*); Mr. Williams, architect, care of Clerk to the Guardians.

Exmouth.—Block of shops; Mr. E. Ellis, architect, Exmouth.

Feltham.—The Urban District Council has passed the following plans:—Two houses, Imperial-road, Tye Estate, for Messrs, Birch & Menday; buildings on site of Prince of Wales beerhouse, for Messrs. Ashby's Brewery, Staines.

Flimby.—Sunday-school; Messrs. W. G. Scott & Co., builders, Workington.

Folkestone.—The Town Council has passed the following plans:—Skating-rink, Victoria Pier, for Rinkeries, Ltd., Mr. R. Pope, architect, 17, Cheriton-place, Folkestone; two detached houses, Ravenlea-road, for Mr. W. Smith, Mr. P. Knowles architect; motor garage, Grimston-gardens, for Mr. E. L. Marshall, Messrs. D. Baker & Co., builders; four houses, Stuart-road, for Mr. F. E. Maycock.

Frome.—Church; Committee of the United Chapel Congregation.

Granton.—Villa (2,000*l.*); Mr. J. H. Smith, architect, Strathspey Estate Office, Grantown.

Hamilton.—Golf clubhouse; Messrs. Cullen & Brown, architects, Hamilton.

Hetton-le-Hole.—Public offices; Mr. J. Harding, architect, Hetton.

Hillborough.—School; Norfolk County Education Committee, Shire Hall, Norwich.

Ilford.—Golf clubhouse; Mr. A. J. Magson, hon. secretary, Ilford Golf Club.

Ingrow (Keighley).—Mills; Messrs. Broster & Son, builders, Keighley.

Jarrow.—Concert hall; Messrs. Barnes & Burton, architects, 6, Jesmond Dene-road, Jarrow.

Lincoln.—Children's Home; Clerk to Lincoln Board of Guardians.

Llanfaes.—School; Mr. C. W. Best, architect, Brecon.

Middleton.—School; Mr. W. Rushworth, architect, Shire Hall, Durham.

Newton Abbott.—Post-office; Messrs. Rowell, Son, & Locke, architects, Newton Abbott; Mr. H. Mills, builder, Newton Abbott.

Nottingham.—Public baths (10,000*l.*); Mr. F. B. Lewis, architect, Guildhall, Nottingham. Church; Rev. J. H. Taylor, vicar, St. Christopher's.

Parkstone.—Skating-rink; Secretary, Parkstone Roller Rink Company.

Pitlochry.—Mansion (2,000*l.*); Mr. T. Munro, architect, 62, Academy-street, Inverness.

Plymouth.—The Town Council has passed the following plans:—Roman Catholic Church, at junction of Home Park-avenue and Holland-road, Bishop of Plymouth; sixteen houses, Salisbury-road, for Mr. H. Foster; St. Martin's Church, corner of Weston Park-road and Tavistock-road, for vicar and churchwardens.

Pontcymmer.—Skating-rink; Messrs. Cook & Edwards, architects, Bridgend.

Prestwick.—Villas (2,000*l.*); Mr. J. Pearson, architect, 51, John-street, Kilmarnock.

Radyr (Glam.).—Additions to Christ Church; Mr. G. E. Halliday, architect, Castle-street, Cardiff.

Runton.—School; County Education Architect, Shire Hall, Norwich.

Shirebrook.—School (4,700*l.*); Mr. F. Martin, builder, Stapleford.

Southampton.—The Town Council has passed the following plans:—Two houses, Randolph-street, and four houses, Edward-road, for Mr. G. R. Long; two houses, Suffolk-avenue, and ten houses, Lumsden-avenue, for Messrs. Jurd, Sanders, & Christie; twenty-five houses, Sidney-place, six houses, Anglesea-road, and eight houses, Romsey-road, for Mr. W. H. Masters; four houses, St. James's-road and Grosvenor-road, for Messrs. Hair & Bucknill.

Stockport.—Bank premises; Mr. R. Carlyle, builder, Old Trafford, Manchester.

Stretford.—The Urban District Council has passed the following plans:—Mill, Trafford Park, for Messrs. Greenwood & Son; ten houses, Marland-road, for Mr. Thomas Emery; extensions to Talbot House, for the Royal Schools for the Deaf and Dumb; additions to works, Cornbrook, for Messrs. W. Thorpe & Son; twenty-two houses off Lacey-street, for the Urban District Council.

Stroud (Glos.).—Skating-rink, London-road; Local Syndicate.

Sudbury.—School; Mr. H. Middlewich, builder, Bardwell.

Sutton (Surrey).—The Urban District Council has passed plans for four semi-detached houses in Lichfield-road, for Mr. W. Dallman; and for two semi-detached houses, Lenham-road, for Mr. W. Shannon.

Tonbridge.—Skating-rink; Local Syndicate.

Tudhoe.—School; Mr. W. Rushworth, architect, Shire Hall, Durham.

Wakefield.—Church hall, Denby Dene-road; Trustees, St. James's Church.

Wakeham. — Church; Trustees, United Methodist Church.

Walsall.—The Town Council has passed the following plans:—Four houses, Birmingham-road, for Mr. T. Aldridge; extensions to factory, Cecil-street, for Mr. J. W. Farrington; warehouse, Windmill-street, for Messrs. Matthew, Harvey, & Co., Ltd.; rebuilding Walsall Arms public-house, Bank-street, for Mr. G. Whitehouse.

Winchester.—School; City Surveyor, Guildhall.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Marner-street, Bow.—The tender of Messrs. G. & E. Bradley, 723*l.* 10s., was recommended for heating works, the architect's estimate of which was 777*l.*

Adapting a Stable.—The tender of Mr. L. Kazak, 318*l.* (architect's estimate 300*l.*), recommended for adapting stable at Avery-hill College for the purpose of botany organisation.

Holmes-road, St. Pancras.—For provision of housewifery centre the tender of Mr. W. Reason, 143*l.*, was accepted; architect's estimate 125*l.*

Home for Little Boys, Clapham.—Providing water-closets, Mr. E. Triggs, 92*l.*, accepted.

Montem-street, Islington.—Altering entrance and forming new entrance, Messrs. Stevens & Sons, 72*l.*, accepted.

Upper North-street, Poplar.—Extending staircase and forming new lavatory, Mr. H. C. Horswill, 177*l.*, accepted.

Albert Institute, Southwark. — Adapting rooms as housewifery centre, Messrs. Maxwell Brothers, 145*l.*, accepted.

Selincourt-road, Wandsworth.—Completing playground and providing new shed, Mr. E. Triggs, 140*l.*, accepted.

Work Executed by the Works Department.—Commenting upon this, the Building Sub-committee explained that the reason why the actual cost of the London Day Training College and the Central School of Arts and Crafts was 100,841*l.* 13s. 10d., being 9,272*l.* 18s. 9d. over estimates, was partly due to the fact that the work was spread over three years. With reference to the structural improvements at Pritchard's-road, Bethnal Green, which cost 4,997*l.*, or 1,602*l.* over the estimate, the explanation was that there was delay in getting possession of the site, and the work was proceeded with as a matter of urgency.

Obituary.

MR. SHERRIN.

We regret to announce the death, last week, of Mr. George Campbell Sherrin, architect, of No. 44, Finsbury-square, E.C., and the Gate House, Ingatestone, Essex. Mr. Sherrin was elected an Associate in 1882, and a Fellow in 1898, of the Royal Institute of British Architects; in 1872 he became a member of the Architectural Association. Among his chief architectural works are the following:—Buildings in and around Spitalfields Market, 1886; the outer dome and lantern, the Oratory, South Kensington; houses at Westgate-on-Sea; "Beauvale," Sunningdale, 1886-7; offices at the corner of Serle and Carey streets, W.C.; rebuilding of No. 84, Piccadilly, afterwards the Imperial Service Club, 1899-1900; premises in Hambury-street, London Fields, for the City of Dublin Bottling Company; a residence for Colonel Cubitt at Camberley, near Bagshot; a block of flats on the site of Nos. 2, 3, 4, Church-row, and the rebuilding of the Orphanage, Holly-place, Hampstead, 1897-8; premises in Pennsbury-terrace, Wandsworth-road; Moorgate Station-chambers, Moorgate-street, E.C., 1902-3; and the superstructure of the Moorgate-street railway-station, at a cost of about 18,000*l.*, in 1893-4; Alexandra Hotel, with assembly hall, theatre, restaurant, etc., Marine-parade, Dovercourt, and a seaside house there, 1903; superintendence of the erection of chambers on the garden site, Clement's Inn, W.C.; new buildings, Douai College; St. Mary's (new) R.C. church and presbytery, Eldon-street, Moorfields, built by Messrs. Holliday & Greenwood, and opened on March 25, 1903 (illustrated in the *Builder*, August 31, and October 5, 1907, doorway and presbytery above); premises for Messrs. Sadgrove, furniture dealers, and Eldon House, in Eldon and Wilson streets, Finsbury (August 31, 1907); "Wynnstow," Limpsfield, for W. T. Allen, and "Norato," at Beccles, 1903; "Hollycombe," Liphook, Hants, for Mr. J. C. Hawkshaw; "Laggis," Netherhall-gardens, Hampstead, 1888; rebuilding and improvement, in 1805-9, of the M. and M. D. Ry., Kensington High-street, Gloucester-road, Monument, and South Kensington railway-stations; Rayleigh House (and additions), Tite-street, Chelsea, for the Hon. R. Strutt; Spencer House, South-place, Finsbury (August 31, 1907), and Eldon-street House (October 5, 1907); alterations, No. 40, Welbeck-street, W.; Cannon-street Buildings; restoration of Thorndon Hall, Brentwood, for Lord Petre; many residences in Essex, Isle of Wight, Sussex, and Surrey; and St. Mary-at-Hill House, an extension over the railway shaft, Eastcheap, for Messrs. Trower & Sons (November 2, 1907). Mr. Sherrin and Mr. John Clarke were appointed eleven years ago as joint architects to the Margate and Southend Kursaals Company, Ltd., and Mr. Sherrin, in conjunction with Mr. R. J. G. Read, C.E., was the architect of the Kursaal at Southend, the scheme including a tower, circus, arcade, fifty-three houses, and ninety shops, begun in 1898, upon a site of some 26 acres, at an outlay of more than 80,000*l.* In August—October last he was appointed as architect for the rebuilding of the Mark-lane railway-station of the M. and M. D. Ry. Companies, and of their Victoria station, with an arcade to connect the entrances in Victoria-street and Terminus-place; he was also appointed, just recently, for an extension of the St. Edmund's Convent Schools in Little Union-street, Lisson-grove. Mr. Sherrin, we may add, was a generous subscriber to the new premises fund of the Architectural Association. He was a member of the Burlington Fine Arts Club, and in former years a contributor to the Royal Academy Exhibitions. His son, Mr. Frank Sherrin, was associated with him latterly in his practice. In all Mr. Sherrin's work there was the feeling of a true artist. He had built for himself, a good many years ago, a charming house at Ingatestone, planned and designed with a great deal of originality. At some of the recent annual excursions of the Architectural Association he was a prominent and most welcome member of the party, attaching the younger men much to him by his kindly manner and his interest in the objects of the excursions.

MR. CUTLER.

We regret also to announce the death, on December 10, at his residence, No. 5, Queen-square, Bloomsbury, of Mr. Thomas William Cutler, F.R.San.I., in his 68th year. Mr. Cutler was elected in 1873 an Associate, and in 1879 a Fellow, of the Royal Institute of British Architects, and served as member of the Council; in 1867 he became a member of the Architectural Association. Mr. Cutler was appointed a member of the Executive Committee for the seventh International Congress of Architects, London, 1906: he was appointed to represent the Royal Institute of British Architects at the Triennial International Congress of Hygiene and Demography, Madrid, 1898; on the Sanitary Inspectors' Examination Board; at the annual Congress of the Royal Sanitary Institute, Bradford, 1903, Glasgow, 1904, and Bristol, 1906, and as a judge of the Health Exhibition; and the sixth International Congress of Architects, Madrid, 1904. In 1901 he was appointed Honorary Secretary of the architectural section, and collected and arranged the contents of the architectural museum, British Congress on Tuberculosis, Queen's Hall, London, 1901, and in 1903 was elected Treasurer of the Royal Sanitary Institute. Mr. Cutler was the architect of the Hotel Metropole, Folkestone, built at a cost of some 150,000*l.* (illustrated in the *Builder*, July 31, 1897); Convalescent Children's Home and Cripples' Wards, Epping Forest (November 20, 1897), and the Vicarage, High Beach (November 20, 1897); Italian Hospital, Queen-square, W.C., erected for about 20,000*l.* (March 10, 1900, and staircase and chapel, April 5, 1902); improvement and enlargement of the Grand Hotel, Broadstairs, 1898; Kursaal, Ramsgate, with assembly-rooms, theatre, banquetting hall, etc.; a reconstruction, with alterations and extensions, of "Avery Hill," Eltham, for the late Colonel J. T. North, at an expenditure of between 250,000*l.* and 300,000*l.*, 1899-90; some small country houses (December 7, 1895); plans of improvements at Leeds for the City of Leeds Central Estates Company, Ltd., comprising the rebuilding of the Bull and Mouth Hotel, a large emporium opposite Briggate, and many shops in Kirkgate, New Central-street, and Central-road, carried out by Messrs. Armitage & Hodgson, of Leeds, builders, at an outlay of nearly 100,000*l.*,

1900-2; a cemetery lodge in Warwickshire (March 10, 1900); houses in Abbey-place, St. John's Wood; plans for reconstructing the Liverpool Infirmary for Children, at an estimated cost of 30,000*l.*, 1900-1; Queen's Hotel, Southsea (May 16, 1903); plans for entirely remodelling the Royal Isle of Wight County Hospital, at a computed cost of 18,500*l.*, proceeded with, in part, 1903; and eleven detached houses on the Cleeve Park Estate, Goring-on-Thames. He made the sketches for the figures of "Summer" and "Autumn" for the new Bull and Mouth Hotel, Leeds, and acted as assessor for the Bucks County Council Schools at Aylesbury and Wolverton in May, 1905.

MR. SAUNDERS.

Mr. James Ebenezer Saunders, F.S.A., F.R.A.S., F.G.S., F.Z.S., of Chelviston, Eltham-road, Lee, architect and surveyor, who died on November 24, aged 79 years, prepared the plans and general designs (the elevations being by Mr. R. J. Worley) for the rebuilding of the London Pavilion, near Regent-circus—illustrated in the *Builder* of December 26, 1885—and, jointly with Messrs. F. & H. Francis, of the Hôtel Métropole, Northumberland-avenue, and the Grand Hotel, Charing Cross: erected in 1879-85. He was also the architect for the restoration, in 1894, of St. Stephen's Church, Coleman-street, E.C.; a block of buildings on the sites of old Winchester House, Old Broad-street, and the Greek Church in London-wall, with frontages to Old Broad-street, London-wall, and Great and Little Winchester streets, 1883-4; of buildings on a large site in Clifton-street, Shoreditch, for Messrs. Wertheimer, Lea, & Co., and, for Messrs. Howard Wall & Co. and the Creeds Trust, of premises on the site of Nos. 25-37, Hackney-road, Shoreditch.

General Building News.

CHURCH OF ST. JOHN THE BAPTIST, KENSINGTON.

Messrs. James Brooks, Son, & Adkins have been appointed as architects for the completion of the church of St. John the Baptist, in Holland-road; Messrs. E. A. Roome & Co. are the contractors for the work. The designs for the church were made by the late James Brooks, and the chancel, constructed of stone, and a temporary annexe were opened for service in June, 1876.

BAPTIST BUILDINGS, KINGSTHORPE.

The Kingsthorpe Baptists have erected new buildings, comprising senior classrooms, a minister's vestry, and an assembly-room. Mr. J. Ingman was the architect, and the work has been carried out by Mr. A. J. Chown.

BANK PREMISES, NEATH.

New bank premises for the Metropolitan Bank of England and Wales, Ltd., have just been erected at Neath. The principal façade of the building is built of Monks Park stone. In the basement are the muniment and strong rooms, etc. The ground floor has a banking chamber, manager's room, and waiting-room. The first and second floors are to be let for offices and caretaker's apartments. The work has been designed by Mr. Glendinning Moxham, F.R.I.B.A., architect, Swansea, the contractors being Messrs. Lloyd Brothers, Swansea.

PROPOSED PIER PAVILION, BOURNEMOUTH.

The Bournemouth Corporation's scheme for the provision of a pier pavilion on the site of the Belle Vue and Pier Hotel was inquired into on the 7th inst. by Mr. H. Shelford Bidwell, M.Inst.C.E., Inspector to the Local Government Board. The application to the Board is for sanction to borrow a sum of 77,000*l.* The Town Clerk (Mr. Geo. W. Bailey) said that the scheme included a large hall accommodating 1,500 or 2,000; a vestibule, cloakrooms, and a small hall for dances, drawing-room meetings, etc., dining-rooms, a ladies' room; promenade, covered and open, where teas could be served and open-air music provided, and where shelter was afforded; ladies' retiring-rooms, a billiard-room, which would be really a recreation-room; a buffet lounge; a promenade on a higher level, giving views of the bay; and a substructure to which would be transferred the business now done at the Belle Vue Hotel. There was in the latter portion sufficient room for baths and a skating-rink, and possibly a few fancy shops, at which visitors liked to deal. Subsequently the Inspector said he had various questions to ask the Borough Surveyor and Engineer (Mr. Lacey), and his examination of that witness on structural matters and in regard to the scheme generally would take, he thought, an hour. It was then decided to adjourn, and as the Inspector intimated his engagements would not permit his resuming the inquiry before Christmas, and probably not before the second week in January, he adjourned the proceedings *sine die*.

HOUSING SCHEME, LIVERPOOL.

At a recent meeting of the Liverpool Housing Committee it was announced that the trustees under the will of the late Mr. Sutton have in prospect a scheme for the erection of 150 model cottages in the outskirts of the city for the use of the poorest classes of the community. About two years ago it was intimated to the Committee that under the will of this gentleman a large sum of money—at the present time it exceeds two millions—was held in trust for building model dwellings for the poor. At that time the Town Clerk and the City Surveyor approached the trustees, but the reply was that they were engaged on schemes in London, and were not likely to turn their attention to the provinces for some months to come. In a communication they have now made to the Committee the trustees state that they are looking out for a site for model cottages in the neighbourhood of Liverpool, and that their representative has seen several sites during a recent visit to Liverpool, and was very much struck with a part of the Lisburn Farm Estate belonging to the Corporation, situate between the new Queen's-drive and Larkhill-lane, and containing about 12 acres of ground. The trustees desired to know if the Corporation would sell this property for the erection thereon of model cottages, and, if so, at what price. If satisfactory terms could be arranged the Sutton trustees are "prepared to submit a scheme for erecting some 150 model cottages to be let at rents such as would readily command tenants from among the poorest classes of the community." A sub-committee is at present considering the matter.

PROPOSED DIPHTHERIA HOSPITAL, ST. ALBANS.

Mr. W. W. E. Fletcher, M.B., recently held an inquiry into an application made by the St. Albans City Council for permission to borrow 3,320*l.* for the provision of additional isolation hospital accommodation on the Folly Mead site. Mr. E. P. Debenham (Town Clerk) said that the city and neighbourhood was without proper isolation hospital accommodation for diphtheria. Mr. G. Ford (City Surveyor) produced plans of the proposed new block, and went through them in detail with the Inspector.

TREVELYAN HALL, WESTMINSTER.

This hall, which was dedicated on December 4, adjoins, and is an extension of, the mission buildings of St. Matthew's, Westminster, and occupies the site of some very tumbledown cottages and a narrow alley, which has been formally closed. On the ground floor, in addition to the kitchen and an enlarged parish workers' room, are rooms for the parish nurses, waiting-room, boiler-room, and lavatories. On the first floor, approached by a separate entrance, is the Trevelyan Hall, having an area of some 1,560 super. ft. It is divisible, by means of a large revolving partition, so as to form a smaller hall or afford two rooms for clubs, classes, etc. An important painting by E. de Morgan, entitled "Attainment," is the chief ornament of the interior. The wood dado and ceiling ribs are painted a dark green, and the walls will be distempered a pale green. The maximum of light and air has been obtained, and there are inlet and extract ventilators. The building is warmed by hot-water radiators, and lighted by electricity, a secondary system of gas lighting being provided. There are two emergency exits and staircases as well as the main staircase. The frontage to St. Anne's-lane is largely of terra-cotta and partly of glazed brick. The work has been carried out from the designs of Mr. Harold S. Rogers, architect, by Messrs. F. C. Hoskins & Co., whose tender was the lowest of the four invited. Among the firms employed were Messrs. J. C. Christie (warming and lighting); Mark Fawcett & Co. (fireproof flooring and steel roof principals); Saml. Haskins & Co. (revolving partition); Wm. Pearce, Ltd., Birmingham (iron casements and glazing); Shaw's Glazed Brick Company, Whitekirk, Darwen (facing bricks and terra-cotta); and Winser & Co. (drainage and sanitary fittings).

DISPENSARY, RETFORD.

A new dispensary has been built in connexion with the Retford Hospital, at an approximate cost of between 900*l.* and 1,000*l.* The building has been designed by Mr. W. Southall, architect, and the contract has been carried out by Messrs. Thomas Hopkinson & Son.

GENERAL POST OFFICE, DUBLIN.

Particulars have just been issued by the Commissioners of Public Works of the extension of the General Post Office, Dublin. It is to be erected in Princes-street, adjoining the existing post office buildings, and the new structure will cover an area of over 6,300 sq. ft. The building is designed to be fireproof, the floors being formed of tubular concrete on cased-steel girders, supported by cased-steel stanchions. The walls will be chiefly brick, the main front to Princes-street being faced with granite ashlar to match the present buildings.

NEW HOTEL, SHEFFIELD.

Progress is being made on the erection of the new Grand Hotel in Leopold-street, Sheffield. The building will contain a corridor lounge, 140 ft. long, overlooked by a band and tea gallery, a large conference-room, a dining-hall, capable of seating 200 guests at a public dinner, as well as many smaller dining-rooms. All the public rooms are on the ground floor. Numerous private suites of rooms are provided, in addition to which there are more than 160 guests' bedrooms, in each of which will be fitted a telephone. The architects are Messrs. Connor & Chorley, of Leeds.

COUNTY OFFICES, CARDIFF.

The Glamorgan County Council Standing Joint Committee received thirteen tenders for the superstructure of the new county offices in Cathays Park, Cardiff, and have accepted that of Messrs. Turner & Sons, of Cardiff, at 51,542*l.*, subject to their executing a contract in the approved form within three weeks, and to their sureties becoming bound in two-thirds of the contract sum for the due performance of the contract. The Committee have decided to roof the building with Preselly olive slates, at an additional tendered price of 84*l.*

SKATING-RINK, LIVERPOOL.

A new rink has been opened in Renshaw-street, Liverpool. The building is entered through a hall and corridor. The ceiling and upper part of the walls of this section of the premises have been treated with fibrous plaster work, carried out by Messrs. Henry Johnson & Sons, of Liverpool. The floor is of Terrazzo marble. On the left-hand side of the corridor are the gentlemen's dressing-rooms, staff, and cycle storage rooms, and ladies' lavatory, whilst on the opposite side are the ladies' dressing-rooms, staff-room, and gentlemen's retiring-room. There are four pairs of emergency exit doors to the main building. On the immediate left are the ladies' and gentlemen's cloakrooms and the skate-rooms, between which and the main rink is a large open space. The main rink has a skating surface of 25,000 ft., being 240 ft. long and nearly 100 ft. wide. The skating floor has been constructed by Messrs. J. C. Plimpton & Co., Liverpool. The steel principals are 30 ft. high, and the distance between the rink floor and the apex of the roof is 52 ft. The firm supplying the steel framework are Messrs. Robinson & Kershaw, of Manchester. The electric installation has been done by Messrs. Lightfoot Brothers, of Manchester. Mr. Thos. M'Hugh, Bootle, executed the plumber's work, and Mr. Arthur Lloyd, of Liverpool, did the painting. The architect was Mr. Sydney Dalton, Liverpool.

TRADE NEWS.

WE are informed that the purchase by a local company of Messrs. Marsh, Son, & Gibbs, Ltd., concern recently announced in the Press, embraced only a portion of the area of the Hartham Park mineral originally leased to Messrs. Marsh, Son, & Gibbs, Ltd. A very valuable portion, consisting of upwards of 60 acres of this land, has been acquired by the Yockney and Hartham Park Stone Company, Ltd. (in which are incorporated several old-established firms), and active operations are now being carried on by them.

The Marbolith Flooring Company are now laying their "Marbolith" new jointless flooring at the new German Y.M.C.A. building in London.

The "Shark Grip" Tiling Company, Ltd., have been accepted to carry out the tiling of the sculleries to the War Office in the Queen Alexandra Millbank Hospital. They are also tiling the radium factory, Limehouse; the St. Mary's Hospital, Plaistow; the Fishguard Bay Hotel, for the G.W.Ry., for which latter place they have secured also the parquet flooring contract for a large amount.

The extensions to the Small-pox Hospital, Wakefield, are being warmed and ventilated by means of Shorland's double-fronted warm-air ventilating patent Manchester stoves and Manchester grates, supplied by Messrs. E. H. Shorland & Brother, of Failsworth, Manchester. The firm are also supplying their grates for the Small-pox Hospital at Redbourn.

The tower of the parish church, Dartford, Kent, is being restored, and a new clock with chimes is being erected. It will have two 6-ft. illuminated dials, play the Westminster chimes on four bells, and strike the hours on the largest bell in the tower. The tender of Messrs. John Smith & Sons (Derby) has been accepted.

Stained Glass & Decoration.

MEMORIAL WINDOW, HEXHAM ABBEY.

A new stained-glass window, designed and executed by Messrs. Davidson & Walker, Newcastle, has been placed in Hexham Abbey. The window is of interest inasmuch as it contains some glass dug up this summer at the excavations at Corstopitum, near Hexham. The window is intended to commemorate the completion of the rebuilding of the nave.

Sanitary and Engineering News.

ROYAL SANITARY INSTITUTE.

At an examination in sanitary science as applied to buildings and public works, held in London on December 3 and 4, 1909, nineteen candidates presented themselves, and the following six candidates were granted certificates:—T. S. Attlee (Westminster); E. W. Pullen (St. Albans); A. Rusbridge (Reading); G. H. Thomas (Tonbridge); E. C. Weeds (Hythe); W. N. Wright (Woodford).

SEWAGE DISPOSAL, MINWORTH.

Major C. E. Norton, R.E., Inspector to the Local Government Board, held an inquiry a short time ago into an application by the Birmingham Tame and Rea District Drainage Board for permission to borrow 9,311*l.* for purposes of sewage disposal (including the execution of works in the hamlet of Minworth), and for sanction to the application of a capital sum of 1,000*l.* received from the Town Council of Sutton Coldfield towards defraying the cost of the proposed works. The Town Clerk, in supporting the application, said that three sums were involved. The first was 911*l.*, excess expenditure in respect of tanks at Ashold and Tyburn. The next part of the application was in respect of 1,400*l.*, for widening and improving the River Tame at Bromford. The Town Clerk said the improvement was very desirable, and the Board were anxious to carry out the work as soon as possible. The remaining portion of the application was for a loan of 8,000*l.*, for an extension of the sludge-conveying scheme. In July last the existing sludge main broke down, and for two or three days, while repairs were being executed, the Board were placed in considerable difficulty. The Engineer afterwards advised the Board to duplicate the main and carry out certain additional works for rendering the treatment of the sludge even more efficient than it was now. There was no opposition to any part of the application.

WATER SUPPLY, PATELEY BRIDGE.

A scheme of water supply for Pateley Bridge has been carried out by the engineer, Mr. Edward Wilson Dixon, of Messrs. Dixon & Ritchie, and by the contractor, Mr. J. H. Grange, of Pateley Bridge. The reservoir contains 90,000 gallons when filled.

DRAINAGE SCHEME, BARCOMBE, SUSSEX.

The Chailey Rural District Council having applied for a loan of 1,550*l.* for the purposes of drainage at Barcombe, a Local Government Board inquiry into the proposal was recently held by Mr. H. Shelford Bidwell, M.Inst.C.E. Mr. Charles Patrick, Clerk to the Council, gave evidence in support of the scheme, and also Mr. Nicholls, of Messrs. Beasley & Nicholls, engineers, who broadly described the scheme as a main sewer through the middle of the village to which the houses on both sides would be connected, and the sewage conveyed to septic tanks.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. H. Wakeford & Sons, architects and surveyors, have removed from No. 267, Clapham-road, S.W., to No. 161, Clapham-road, S.W. Their telephone number will remain as at present, viz., Hop. 1,891.——Messrs. Horne & Co., surveyors and auctioneers, have removed their offices from 8, Delahay-street to 35, Old Queen-street, Westminster, S.W.——Messrs. Walter Lawrence & Son, building contractors, of Canal Works, Waltham Cross, and Moselle Works, Tottenham, have removed their head office to 21, Finsbury-circus, E.C., where all communications should now be addressed.

CHRIST CHURCH, NEWGATE-STREET, E.C.

At the sitting of the Consistory Court of London on November 26 Dr. Tristram, K.C., Chancellor of the Diocese, agreed to make an order in respect of compensation in the matter of the church's easements of air and light. The new Post Office upon the Christ Hospital site, being closer to the church and more lofty than the former school buildings, interferes with those easements. Under the provisions of the Post Office Sites Act of 1907, and after consultation between Sir Henry Tanner and Mr. Blomfield Jackson, representing the Postmaster-General and the vicar and wardens respectively, a sum of 1,000*l.* has been fixed upon in settlement of the claim, and will be paid by the Crown to the Ecclesiastical Commissioners for investment for the benefit of the incumbent of the living.

ARCHITECTURE AND STEEL STRUCTURES.

The second meeting of the present session of the Architectural Section of the Royal Philosophical Society of Glasgow was held in the rooms, 207, Bath-street, on the 6th inst. Mr. Alexander Cullen, F.R.S.E., presided. A paper on "The Architectural Element in Steel Structures" was read by Mr. Robert Boyle, B.Sc. There was, he said, no fine architectural work associated with bridges in Britain such as existed on the Continent. Many of the latter were the joint product of architects or sculptors and engineers. A large bridge was a national work. It was monumental to its designer, its builder, and its town. Its influence merited attention from the engineer, the architect, and the people. There was a disinclination to spend money on that which was beautiful as opposed to that which was only useful. Sculpture work on piers and approaches were features of large continental bridges. It was remarkable that in the vicinity of a public park in Glasgow (Glasgow Green) there should be two steel-plate girder bridges boarded up and painted to represent masonry arched bridges. This was a violation of architectural and æsthetic principles, and unworthy of an advanced municipality. The modern workshop building was almost entirely steel and glass. In steel-frame buildings the structure should be clear to the intelligent beholder. Static correctness was the source of much real beauty. The appearance of railway-stations largely depended on the roof and the entrance. Favourable reference was made to St. Enoch and Central Stations. That structure was the noblest which expressed in an honest and truthful way the most useful, the most appropriate, the most economical, and therefore the most beautiful result.

MORTAR IN PLYMOUTH.

The Borough Surveyor of Plymouth reports having taken under the new by-laws several samples of mortar during the past month for examination from houses in course of erection. All the samples were deficient in lime, and in some instances unsuitable materials had been used. As, however, these were the first samples taken under the new by-laws, he had merely warned the builders concerned, intimating to them that if in future the proper proportion of lime was not used or unsuitable materials were employed, he would be compelled to serve notices to pull down the work upon which the unsatisfactory mortar had been used, and also to take legal steps to recover penalties.

APPRENTICESHIP SCHEME FOR SOUTHWARK.

The Walworth and Newington Apprenticeship and Skilled Employment Committee, formed some months ago under the presidency of Canon Horsley, now Mayor of Southwark, have lately received, in response to circulars issued amongst boys and girls leaving school, 150 applications for assistance, and the Committee have been able to find suitable positions for twenty-three boys and twenty-two girls. They have opened a loan fund on behalf of parents who need ready money for paying premiums as part of their scheme to provide industrial training by the apprenticeship and the attendance at technical classes and trade schools of boys and girls.

APPRENTICESHIP IN FRANCE.

This question is now being seriously considered in France. The Chambers of Commerce have proposed several solutions which have not, however, received much encouragement so far. M. Jean Cruppi, Minister of Commerce, has also recently published, under the title, "The Economic Expansion of France," a treatise, in which he discusses technical instruction, which he says is far from reaching the extension attained in England and Germany. M. Cruppi's researches show that technical subjects are taught in a few industrial schools, a few professional schools, and in a few special courses organised by some private societies; 870,000 young men and women under 18 years of age are engaged in commercial and industrial occupations. In 1908 the numbers receiving technical instruction in these branches were 22,000 at the schools, and perhaps another 50,000 who attended private courses. Therefore, roughly speaking, 800,000 young workmen and employees receive no technical training. In Germany the technical colleges, schools, and extension courses give instruction to about 330,000 students, the annual expenditure reaching 30,000,000 francs. It is considered that unless the Chamber makes a speedy use of the reports it collected several years ago French superiority in skill and intelligence will be a thing of the past.

THEATRE REGULATIONS IN PRUSSIA FOR THE PLANNING AND FITTING UP OF THEATRES, ETC.

Under the new regulations for theatres, which supersede those of 1891, theatres are no longer divided into large and small premises, but are all classed under one head. The building must be 20 metres distant from the houses opposite, and if erected in a street must have 9 metres wide courtyards on either side of the auditorium. Door and window openings must be 9 metres distant from adjoining buildings. Dwelling-rooms may only be situated on the ground floor level, for the exclusive use of the caretaker. No business premises for letting purposes are permissible. The stalls of the auditorium are to be on the ground floor only, and are to be arranged in groups of five rows, each group having a separate exit on either side. In calculating for passages and doors a minimum of 1 metre per seventy persons is allowed. Each seat must be at least 50 by 80 centimetres; the slope of the floor must not be greater than 5 centimetres in every metre, and no steps are admissible. On the staircases 1 metre in width is allowed for every ninety persons, with a minimum width of 1·25 metre. Separate staircases must be provided for every story of the building, except for the dress circle and stalls, which may have staircases in common. For exits into the open air 1 metre in width is allowed for every ninety persons. For artificial lighting only electricity is permissible, and all heating must be from a central source.

CLARKE'S TABLES.

We have received from Mr. B. T. Batsford a copy of "Tables and Memoranda for Plumbers, Builders, Sanitary and Electrical Engineers," etc., by Mr. J. Wright Clarke, who for some years was lecturer on plumbing at the Regent-street Polytechnic. This little pocket-book, measuring only $2\frac{3}{4}$ in. by $1\frac{7}{16}$ in. by $\frac{1}{2}$ in. thick, contains about 300 pages filled with data on almost every detail pertaining to various branches of domestic engineering. It is a wonderful collection of notes useful to every architect, builder, and sanitary engineer, and the present fifth edition has been brought thoroughly up to date by the inclusion of new tables and paragraphs dealing with recent developments in electric lighting.

LECTURES AT CARPENTERS' HALL.

The Carpenters' Company has decided to give in its hall, beginning in January next, a series of lectures on the arts connected with building, in continuation of those delivered in the early part of this year, and many distinguished gentlemen have been kind enough to undertake to lecture. The lectures will, as before, in the first place, be for all craftsmen and those engaged in actual trades in connexion with the constructive arts, but all of either sex and of any trade or profession are invited to attend. Admission will be free, by ticket. The following is the list of proposed lectures:—

January 12.—Professor Pite, F.R.I.B.A.: "What is Artistic Craftsmanship?"
January 19.—Mr. M. H. Baillie Scott: "The Art of Building, with special reference to the use and abuse of materials."
January 26.—Mr. Banister F. Fletcher, F.R.I.B.A.: "The Carpenter's Craft."
February 2.—Sir Brumwell Thomas, F.R.I.B.A.: "The Joiner's Craft."
February 9.—Mr. Arthur Stratton, A.R.I.B.A.: "Native Craftsmanship in Timber, Brick, and Stone before the XVIIIth. Century."
February 16.—Mr. Lawrence Weaver, F.S.A.: "The Art of the Lead Worker."
February 23.—Mr. George P. Bankart: "The Art of the Plasterer."
March 2.—Mr C. F. A. Voysey: "Castles in the Air."
March 9.—Mr. Halsey Ricardo, F.R.I.B.A.: "The Use of Coloured Materials in Building."
March 16.—Professor G. E. Moira: "Mural Painting."
March 23.—Mr. R. Anning Bell, R.W.S.: "Coloured Reliefs and Mosaic."
March 30.—Mr. F. W. Pomeroy, A.R.A.: "Sculpture as Applied to Buildings."
April 6.—Mr. Thackeray Turner, F.S.A., F.R.I.B.A.: "The Craft of Repairing Buildings."

Tickets of admission to the lectures can be obtained free, from Mr. J. H. Freeman, the Clerk, Carpenters' Hall, London-wall, E.C., from whom particulars can also be had in regard to the competions for prizes offered by the Company.

HELLENIC SOCIETY.

Dr. Emmanuel Loewy has been asked to fill the vacancy caused by the death of Professor A. Furtwaengler on the list of hon. members

of the Society for the Promotion of Hellenic Studies.

PLYMOUTH TOWN COUNCIL AND CONCRETE BLOCKS.

At the meeting of the Plymouth Town Council on Monday the Works Committee reported having considered a letter transmitted by the Local Government Board from the Association of Trade Protection Societies inquiring as to whether it was possible for the by-law relating to new streets and buildings in Plymouth to be amended so as to enable hollow concrete blocks to be utilised for buildings. The Committee recommended that the Local Government Board be informed that the Council saw no reason to alter the existing by-laws. Alderman Debnam moved as an amendment that the recommendation be referred back for further consideration. He said this was a question of trying to bring Plymouth up to date; it had nothing to do with builders, but deeply concerned other classes of the community. If the by-laws were altered in the direction indicated, it would mean cheaper and drier dwellings, more work for unskilled labour, and workmen's houses could be put up at 30 per cent. less cost. There should be no difficulty in securing a standardisation of the blocks to be used.—Mr. Eyre, in seconding the motion, said the Government had been putting up houses for their warders at Princetown of concrete blocks. There could be no reasonable doubt that concrete blocks would be suitable for buildings at Plymouth.—Mr. Pengeley said it was solid concrete and not hollow blocks that were used at Princetown.—Mr. Sayer said concrete houses were both fireproof and vermin proof. In the result the amendment was carried.

ELECTRICITY EXTENSION SCHEME, WALSALL.

Mr. H. R. Hooper, Local Government Board Inspector, held an inquiry recently into an application of the Walsall Town Council for sanction to borrow 35,000*l.* for the purposes of extending and improving their electricity undertaking. The Town Clerk (Mr. J. R. Cooper) explained that the existing works were established many years ago, and it was time they took a step forward and arranged to produce an alternating current system. In reply to the Inspector, the Engineer (Mr. Barnard) said he was anxious to get the three-phase system alongside the present works, so as to deal with applications of large power.

FURNITURE, PICTURE, AND SILVER SALES.

At the sale at Christie's, on December 10, of the property of Mrs. Downing Fullerton, of Purley Park, Berks, a settee and eight fauteuils, carved and upholstered with tapestry—a gift of Queen Marie Antoinette to Antony M. Storer, Secretary to the British Embassy—were bought for 5,000 guineas by Messrs. Lewis & Simmonds. Other lots included a similar suite, of the Louis XV. period, and covered with Aubusson tapestry—410 guineas (Campbell); a panel of old Brussels tapestry, 10 ft. square—600 guineas (Fabre); and an oval enamelled gold locket, English work of *temp.* James I., with a miniature by Peter Oliver—820 guineas (Morgan). Two portraits after the Holbein school, painted on panel, belonging to Mrs. Hartmann's collection, have been sold at Christie's to Messrs. Agnew for 1,000 guineas; and, at Gloucester, a set of twelve Chippendale chairs—290 guineas, a Chippendale mahogany arm-chair—84 guineas, a mahogany wine cooler—80 guineas, and a Chippendale double chair-back settee—200 guineas. The Ord collection, sold at Fornham House, near Bury St. Edmunds, included two old Sheffield tea trays—17 guineas each; five Queen Anne three-prong forks (1713), by B. Watts, 4 oz. 10 dwt., at 92s. per oz.; a Queen Anne tea caddy (1711), 5 oz. 15 dwt., at 115s. per oz.; and a Delft vase—50 guineas. The late Mr. F. G. Hilton Price's collection of early English spoons included a Commonwealth spoon, with a figure of St. Simon Zelotes (1650)—35*l.*, and a Charles I. Apostle spoon, with a figure of St. Matthias (1639)—14*l.* 10s. (Crichton).

FITZWILLIAM MUSEUM, CAMBRIDGE.

Amongst the donations which have been recently made to the Museum are three cartoons by Sir Edward Burne-Jones for windows at Lyndhurst Church, and his study for the figure of Perseus. The Museum authorities have purchased 222 woodcut illustrations after drawings by Millais.

THE LEIGH WOODS, CLIFTON.

Mr. George A. Wills, of Burwalls, near Bristol, has been elected Chairman of the Committee for the management and upkeep of the Leigh Woods and Stokeleigh Camp, consisting of 73 acres on the Somersetshire side of the Avon gorge, which he has acquired from the Leigh Woods Land Company for 12,500*l.*, and has conveyed to the National Trust as a public pleasure-ground. The Committee have resolved to maintain the woods, which comprise the Nightingale valley and the Hanging Woods, in their present state of wild sylvan beauty, and to preserve the ancient camp untouched, though they will make a superficial examination of its outlines and prehistorical vestiges. The Leigh Woods Company was formed some years ago for the purchase from private owners of the entire property, extending over nearly 170 acres, with the object of using much of the land for building purposes. The National Trust, the Bristol Kyrle Society, the Leigh Woods Land Company, and the Bristol and Gloucestershire Archæological Societies have nominated representative members of the Committee.

AN EARLY WORK OF TURNER.

At Sotheby's rooms last week a copy of H. Boswell's "Picturesque Views" of the United Kingdom, 1785, with numerous plates coloured by Turner, was sold for 30*l.* to Mr. Needes. The plates were coloured by Turner when a schoolboy at John White's School (now a clothier's shop) in the High-street, Brentford. Turner was paid 2d. per plate. At that time, 1785, he lodged with his uncle, Marshall, in the old market-place.

Law Reports.

ACTION FOR BREACH OF COVENANT.

In the Chancery Division on the 10th inst. Mr. Justice Parker delivered judgment in the case of Tubbs *v.* Esser, an action by the plaintiff for a perpetual injunction to restrain the defendant from committing an alleged breach of covenant.

The facts were these:—Plaintiff was the owner of freehold houses at or near Fentham-road, Gravelly-hill, near Birmingham, the defendant being the assignee of two of the houses for the residue of terms of ninety years created by the leases, which contained covenants that the lessees would not use, exercise, or carry on, or permit to be used, exercised, or carried on upon the demised premises or any part thereof any trade or business whatsoever; but would keep the demised houses as and for private dwelling-houses. It appeared that defendant had let the gable ends of his two houses to bill posters, who had displayed large advertisements on the walls let to them. Plaintiff's case was that this was a breach of the covenant in question, and claimed the injunction as stated. Defendant denied that what he had done was a breach of the covenant.

Mr. Justice Parker, however, held that it was a breach of the covenant, and granted the injunction as prayed for with costs; but suspended the operation of the injunction until March 25, 1910, as the defendant could not before that date get rid of the contract he had made with the bill posters.

Patents.

APPLICATIONS PUBLISHED.*

24,533 of 1908.—John Somerville Highfield: Electrical wiring for houses and the like.

24,636 of 1908.—François Pollet: Tools for cutting grooves in wooden casings or mouldings and the like.

25,206 of 1908.—Albert Carl: Ceilings and building blocks employed in their construction.

25,224 of 1908.—Joseph Milner Lockhart and Herbert John Jenkinson: New appliance to be used in "boning" or laying drain or other pipes to a desired fall or gradient and generally for use in laying or fixing to a gradient.

25,227 of 1908.—Albert Rhodes: Firegrates for kitchen and like ranges.

25,244 of 1908.—Thomas Harden: Apparatus for machining pipe ends to form spigot and socket joints.

25,470 of 1908.—Walter Longland and Charles Edward Larard: Machines for testing the strength of materials by impact.

1,408 of 1909.—Mark Fawcett: Steel and concrete construction.

1,943 of 1909.—Charles Henry Darbishire.—Apparatus for riddling or heating stones.

2,126 of 1909.—Charles Braunstein: Low-pressure steam-heating apparatus.

2,947 of 1909.—Georg Hiller: Centrifugal mixer of concrete and other mortar mixtures.

3,039 of 1909.—Paul Brostowski, Robert Siebert, and Hermann Schlaefer: Device for the automatic operation of window blinds.

3,133 of 1909.—Gwyn Reid Thomas: Apparatus for the manufacture of concrete or composition slabs for walls, partitions, and the like.

5,353 of 1909.—Evered & Co., Ltd., and Joseph George Rollason: Brackets or fittings for certain rods, blind poles, stair and other similar rods, and poles.

6,833 of 1909.—Thomas Utley: Windows and similar closing devices.

8,171 of 1909.—Hermann Bayer: Water-closet basins and seats.

9,136 of 1909.—John Mills: Building bricks or blocks.

14,048 of 1909.—Hercules Herbert Hadley: Reinforced concrete construction.

14,693 of 1909.—John Graham Stewart: Construction of roofs.

15,479 of 1909.—Wallace Pinknie Perkins: Window sashes.

16,949 of 1909.—Robert Henry and William Boyes: Sash fasteners.

17,632 of 1909.—Joseph Duffy: Composite flooring blocks.

18,659 of 1909.—Alfred Watkins: Rotary oil-stones and grinders.

* All these applications are in the stage in which opposition to the grant of a patent upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

December 1.—By SWANNELL & SLY (on Premises).

Northwood, Middlesex.—Eastbury-rd., Koh Samui and ½ acre, f.	£3,4[illegible]0

December 7.—By G. W. & H. G. POTTER.

Hampstead.—41, High-st. (s.), u.t. 19 yrs., g.r. 40*l.*, y.r. 70*l.*	255

By J. A. LUMLEY & DOWELL.

Llanfaelog, Anglesea.—Plas Llanfaelog and 26 acres, f.	7,880

By GREEN & SON (at Hammersmith).

Isleworth.—Aylett-rd., f.g. rents 21*l.* 10s., reversion in 91 yrs.	455
West Kensington.—9, Ceylon-rd., f., w.r. 33*l.* 16s.	360

By MADDISON, MILES, & MADDISON (at Yarmouth).

Gorleston, Norfolk.—Dock Tavern-la., freehold land, 1 a. 2 r. 24 p.	1,500

By J. B. ROSEVEAR & SON (at Fulham).

Fulham.—131, New King's-rd., u.t. 75 yrs., g.r. 7*l.* 14s., y.r. 50*l.*	430
3, Eddiscombe-rd., u.t. 80 yrs., g.r. 5*l.* 10s., w.r. 41*l.* 12s.	260

December 8.—By HAROLD GRIFFIN.

Balham.—Chestnut-gr., f.g. rents 30*l.* 10s., reversion in 60 yrs.	835
Boundaries-rd., f.g. rents 32*l.* 19s., reversion in 58 and 67 yrs.	825
Battersea.—35 and 37, Mallinson-rd., f., w.r. 85*l.* 16s.	600
Fulham.—4, Cresford-rd, u.t. 78 yrs., g.r. 5*l.*, y.r. 36*l.*	330
Holloway.—83 and 85, Moray-rd., u.t. 56 yrs., g.r. 13*l.* 13s., w.r. 109*l.* 4s.	500

By NOKES & NOKES.

Barnsbury.—13, 14, and 15, Denmark-rd., u.t. 38 yrs., g.r. 18*l.*, y. and w.r. 140*l.*	450

By SWANNELL & SLY.

Pinner, Middlx.—Love-la., Nascot and ½ acre, f.	1,055

By WARE & CO.

New Cross.—Achilles-st., f.g r. 7*l.*, reversion in 48 yrs.	250
Chichester, Sussex.—22 to 25, Caledonian-rd., f.	620
Stockbridge, Sussex.—Victoria Villas and plot of land, f.	410

December 9.—By H. J. BLISS & SONS.

Bethnal Green.—Bethnal Green-rd., f.g.r. 50*l.*, reversion in 24 yrs.	1,10[illegible]
Hornsey.—18, 20, 22, 39, 41, and 43, Coleraine-rd., u.t. 76 yrs., g.r. 36*l.*, y.r. 180*l.*	1,210

By FAREBROTHER, ELLIS, & CO.

Peckham.—5 to 10, 17 to 20, South-gr., f., w.r. 324*l.* 12s.	2,200

By C. C. & T. MOORE.

Mile End.—23 and 25, Copperfield-rd., u.t. 57½ yrs., g.r. 7*l.*, w.r. 65*l.*	250
Leytonstone.—62 and 64, Cecil-rd., f., w.r. 33*l.* 16s.	220

By NEWBON, SHEPHARD, & EDWARDS.

Highbury.—188, 188A, 190, and 190A, Blackstock-rd. (s.), f., y. and e.r. 86*l.*	400
Hampstead.—56, Adelaide-rd., u.t. 34 yrs., g.r. 8*l.*, e.r. 60*l.*	320
Islington.—14, Froome-st., u.t. 38 yrs., g.r. 5*l.*, e.r. 30*l.*	140
Pentonville.—30 and 30A, Hermes-st., u.t. 15 yrs., g.r. 35*l.*, w.r. 106*l.* 12s.	110
Battersea.—28 and 30, Savona-st., f., w.r. 49*l.* 8s.	335
Ponders End.—13, 14, and 15, Perth-ter., u.t. 90 yrs., g.r. 9*l.* 15s., w.r. 46*l.* 16s.	100

By STIMSON & SONS.

Balham.—257, 259, 261, 263, and 269, Balham-high-rd. (s.), u.t. 80 yrs., g.r. 100*l.*, y.r. 510*l.*	4,500
Camberwell.—Picton-st., f.g. rents 27*l.* 4s. 6d., reversion in 5 yrs.	1,440
193, Southampton-st., f., y.r. 30*l.*	345
Coldharbour-la., i g. rents 62*l.* 2s., u.t. 13 yrs., g.r. 26*l.* 19s. 11d.	220
26, Boyson-rd., u.t. 40 yrs., g.r. 6*l.*, w.r. 67*l.* 12s.	185

By WRIFORD, DIXON, & WINDER.

Shepherd's Bush.—Stowe-rd., f.g.r. 7*l.* 10s., reversion in 58 yrs.	160

Contractions used in these lists.—**F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.**

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, —; Auction Sales, xxii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

DECEMBER 18.—**Headingley, Leeds.**—TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

DECEMBER 31.—**Cwmgorse.**—CHAPEL.—Plans, specification, and quantities for the erection of a new chapel at Cwmgorse, to seat about 600, not to exceed 3,000*l.* in value. Also for superintending the erection of the same. For further particulars apply to Mr. Owen Williams, Baily Glas Cottage, Cwmgorse, Gwaun-cae-Gurwen.

JANUARY 1.—**Hetton.**—CLUB.—The Committee of the Hetton Working Men's Club invite plans for the erection of a new club. Plans, with estimates, to be sent to Mr. Jas. Widdowfield, Secretary, Hetton Working Men's Club, Pemberton-street, Hetton-le-Hole.

JANUARY 1.—**Larne.**—TECHNICAL SCHOOL.—The Larne Technical Instruction Committee invite competitive designs for a technical school proposed to be erected in Victoria-street. A premium of 21*l.* will be paid for the approved design. Further particulars may be obtained from Mr. Thomas Clearkin, Secretary.

JANUARY 27.—**Southampton.**—PAVILION ON THE COMMON.—The Corporation invite designs from inhabitants of the Borough for the erection of a pavilion on the Common at a cost of not exceeding 500*l.* Particulars and conditions may be obtained upon application at the Town Clerk's Office. A premium of 10*l.* will be awarded to the architect whose design shall be chosen by the Public Lands and Market Committee of the Council, and a second premium of 5*l.* will be awarded.

JANUARY 31.—**Cardiff.**—NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

FEBRUARY 1.—**Oldham.**—PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. E. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1.—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

* MAY 31.—**Karachi.**—MUNICIPAL OFFICE.—The Municipality of Karachi invite elevation designs and detailed plans and estimates for a new Municipal Office. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 18.—**Keighley.**—RESIDENCE.—Erection of residence in Woodville-road, Keighley. Names to Messrs. W. H. & A. Sugden, architects, North-street, Keighley.

DECEMBER 20.—**Macclesfield.**—BAKERY.—(1) New bakery, bath-house, and lavatories, etc.; (2) providing and fixing bakery plant, machinery, and oven, for the Guardians. Copies of specification and quantities can be obtained from Messrs. Whittaker & Bradburn, architects, 19, King Edward-street, Macclesfield.

DECEMBER 20.—**Maidenhead.**—REPAIRS.—Certain repairs at Leopold House, Grenfell-road, for the Guardians. Copies of specification can be obtained on application at the offices of Mr. William Weed, Clerk, Queen-street-chambers, Maidenhead.

DECEMBER 20.—**Mickletown.**—ALTERATIONS TO SCHOOL.—West Riding C.C. Education Department (Methley District Sub-committee) invite tenders for alterations, etc., to be done at Mickletown Provided School. Specifications may be obtained from Mr. B. Leah, Education Office, Castleford.

DECEMBER 20-JANUARY 17.—**Okehampton.**—SCHOOL.—Devon County Education Committee invite tenders for a new higher elementary school for 120 children, with laboratory, cooking, and manual training rooms, at Okehampton. Bills of quantities will be available in due course on payment of 1*l.* 1s. Apply to the County Architect (Education), 1, Richmond-road, Exeter, enclosing a crossed cheque drawn in favour of the County Treasurer.

DECEMBER 21.—**Aberdeen.**—LABOUR EXCHANGE.—The Commissioners of H.M. Works and Public Buildings invite tenders for the adaptation of the old Post-office, Market-street, Aberdeen, for a Labour Exchange. Drawings and a copy of the conditions and form of contract may be seen on application to the Postmaster, Market-street Branch Post-office. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, Parliament-square, Edinburgh, on payment of 1*l.* 1s.

DECEMBER 21.—**Bridlington.**—PREMISES.—Taking down and rebuilding the premises, No. 4, Queen-street, for Mr. E. C. Davis. Drawings, etc., may be seen at the office of Mr. J. Earnshaw, architect, Carlton House, Bridlington.

DECEMBER 21.—**Carn Brea.**—HOUSES.—Erection and completion of three houses at Carnartinen Farm, near Carn Brea Station, according to plans, etc., which may be seen at the office of the proprietor, Capt. T. Negus, Chapel-street, Camborne, and at the office of Mr. Sampson Hill, architect

DECEMBER 21.—**Closeburn.**—ACADEMY BUILDING.—Mason, joiner, slater, plumber, plaster, and glazier and painter works of a new academy building to be erected at Wallace Hall, Closeburn, for the School Board. Plans, etc., may be seen, and schedules of quantities obtained, on application to Messrs. James Barbour & Bowie, architects, Dumfries.

DECEMBER 21.—**South Moor.**—OUTBUILDINGS, ETC.—Plans, etc., for new outbuildings, yards, street formation, sewerage, etc., to 100 houses at South Moor may be seen at the offices of the architect, Mr. J. Wm. Rounthwaite, A.R.I.B.A., 13, Mosley-street, Newcastle-on-Tyne. Quantities will be supplied on deposit of 1*l.* 1s.

DECEMBER 22.—**Hensingham.**—ALTERATIONS.—Alterations, etc., to the property of Mr. Wilkinson, 127 to 129, Main-street, Hensingham. Plans, etc., may be seen at the office of Mr. Jacob Glaister, architect, 48, High Church-street, Whitehaven.

DECEMBER 23.—**Merthyr Tydfil.**—DORMITORIES.—Tenders are invited for the erection of temporary dormitories, etc., at the Union Workhouse, Merthyr Tydfil. Plans, etc., may be seen upon application to the Master of the Workhouse, or at the office of the architect, Mr. Thomas Roderick, Clifton-street, Aberdare, from whom bills of quantities may be obtained.

DECEMBER 27.—**Stockport.**—FIRE-ESCAPE STAIRS.—Tenders are invited for the provision and erection of two iron fire-escape stairs at the Workhouse, Shaw Heath. Persons tendering must submit specification, with sketch of staircases, together with their tender therefor. Further particulars may be obtained on application to the Workhouse Master between 9 a.m. and 12 noon.

DECEMBER 28.—**Exeter.**—SCHOOL.—Tenders are invited for the erection of school buildings, new day-room, for the girls' department, and other work, West of England Institution for the Blind, Exeter. Drawings, etc., can be seen on application to the architect, Mr. James Jerman, F.R.I.B.A., 1, Bedford-circus.

DECEMBER 30.—**Bitton.**—SCHOOL WORKS.—The Gloucestershire Education Committee invite tenders for the formation of playgrounds and the erection of boundary walls at Bitton Council School, near Bristol. Particulars may be obtained from Mr. R. S. Phillips, architect, Midland Bank-chambers, Gloucester.

DECEMBER 31.—**Dublin.**—BUILDING WORKS.—The Board of Public Works invite tenders for the building works and supplies required by the Commissioners of Public Works, Ireland, at the several buildings, etc., in their charge in Dublin and its vicinity. Forms, etc., will be furnished on deposit of 1*l.* Mr. H. Williams, Secretary, Office of Public Works, Dublin.

JANUARY 1.—**Ashby-de-la-Zouch.**—SCHOOL.—Leicestershire C.C. Education Committee invite tenders for the erection of a new elementary school at Ashby-de-la-Zouch, together with out-offices, drainage, etc. Bills of quantities, etc., may be obtained from the Surveyor of Schools, 33, Bowling Green-street, Leicester, on payment of a sum of 10*l.* 10s. Conditions of contract and the drawings may be inspected at the offices of the architect, Mr. John Day, 8, New-street, Leicester.

JANUARY 5.—**Aberdare.**—HOMES.—Merthyr Tydfil Guardians invite tenders for the erection of a pair of cottage homes for children at Abercwmboi, Aberdare. Plans, etc., may be seen, and bills of quantities obtained, at the office of the architect, Mr. Thomas Roderick, Clifton-street, Aberdare.

* JANUARY 5.—**Millbank.**—ADDITIONS AND ALTERATIONS.—The Secretary of State for War invites tenders for reappropriation of medical officers' and quartermasters' quarters, and erection of a hospital for officers. See advertisement in this issue for further particulars.

JANUARY 7.—**Bedford.**—REFUSE DESTRUCTOR WORKS.—The Urban Sanitary Authority, acting by the T.C. of Bedford, invite tenders for the erection of certain buildings in connexion with a proposed refuse destructor. Copies of the general conditions, etc., may be obtained, and the drawings inspected, on application to their Engineer, Major Hector Tulloch, C.B., R.E., No. 28, Victoria-street, London, S.W., on payment of a deposit of 3*l.* 3s. The Engineer will also attend at the Town Hall, Bedford, on December 16 and 17, when the drawings may also be inspected and copies of the bills of quantities, etc., obtained.

JANUARY 7.—**Cefn Coed.**—SCHOOL.—Breconshire Education Committee invite tender for the erection of a new infants' school, for 350 places, at Cefn Coed. Names to Mr. Charles W. Best, M.Inst.C.E., Surveyor to the Breconshire Education Committee, County Hall, Brecon, with particulars of works recently carried out, and the names of two references relative to the quality of the work done.

JANUARY 7.—**Dyffryn Crawnon.**—SCHOOL.—Erection of a new mixed school, for forty places, at Dyffryn Crawnon, near Llangynidr. Names to Mr. Charles W. Best, M.Inst.C.E., Surveyor to the Breconshire Education Committee, County Hall, Brecon, with particulars of works recently carried out, and the names of two references relative to the quality of the work done.

JANUARY 8.—**Marrick.**—HOUSE.—Pulling down and re-erecting a dwelling-house at Marrick, near Reeth, Swaledale, for Mr. John Blenkiron. Plans, etc., can be inspected on the site at Walker House, Marrick, on the 18th and 20th inst. Afterwards from the 24th to the 31st inst. at the offices of Mr. Frank Martin, architect, 2, Prebend-row, Darlington.

* JANUARY 10.—**South Farnborough.**—SCHOOL.—The Southampton C.C. invite tenders for new Council school at South Farnborough. See advertisement in this issue for further particulars.

* JANUARY 17.—**Chelmsford.**—SCHOOL.—The Chelmsford Education Committee invite tenders for school at Trinity-road, Springfield, in the Borough of Chelmsford. See advertisement in this issue for further particulars.

* JANUARY 17.—**West Silvertown.**—SCHOOL EXTENSION.—The West Ham Education Committee invite tenders for extension of schools at West Silvertown. See advertisement in this issue for further particulars.

* JANUARY 18.—**Macclesfield.**—DETACHED VILLA.—The Committee of the Cheshire County Asylum, Parkside, invite tenders for a detached villa for private patients, Parkside Asylum, at Macclesfield. See advertisement in this issue for further particulars.

NO DATE.—**Freshwater.**—PREMISES.—Re-erection of Mr. H. Dowty's premises at Freshwater. Copies of the plans, etc., on application in writing to Mr. J. W. Newman, surveyor, Station-road, Freshwater.

NO DATE.—**Wycombe Marsh.**—COTTAGES.—Taking down old building and erecting two cottages at Wycombe Marsh. For particulars apply to Mr. A. W. Nash, architect, Priory-avenue, High Wycombe.

ENGINEERING, IRON, AND STEEL.

DECEMBER 20.—**Honley.**—FOOTBRIDGE, ETC.—Honley U.D.C. invite tenders for (1) erection of iron footbridge over the River Holme at Newtown, Honley; (2) laying 250 lin. yds. of 12-in. by 8-in. kerb in Old Turnpike-road. Plans may be seen, and bills of quantities obtained, on application to Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

DECEMBER 20.—**Newbury.**—PUMP.—Newbury Guardians invite tenders for a Mumford or Tangye donkey feed pump. Further particulars may be obtained of Mr. Han. Hill, 95, Northbrook-street.

DECEMBER 21.—**Sheffield.**—STEEL ROOF.—The Directors of the Sheffield United Gas Light Company invite tenders for the supply and erection of a steel roof, 304 ft. long by 105 ft. 6 in. wide, forming the roof over their No. 3 retort house at Neepsend Works. Also for the supply and delivery only of 252 retort mouthpieces, 24½ in. by 16½ in. Drawings may be seen, and bill of quantities, etc., obtained, upon application to the Company's Engineer, Mr. J. W. Morrison.

ENGINEERING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

DECEMBER 22.—**Milton Regis.**—HEATING TO THE BUTTS COUNCIL SCHOOL.—Kent Education Committee invite tenders for the improvements to the heating arrangements at the boys' department of the school. Plan, etc., can be seen at the school during school hours.

DECEMBER 23.—**Rotherham.**—CYLINDER, ETC.—The Guardians invite tenders for the supplying and fixing of copper cylinder in laundry; also for the supply, delivery, and fixing of one copper cylinder with colourifier and all piping, etc., for the work, in connexion with the hot-water supply at the Workhouse. Detailed specifications can be obtained on application to the Workhouse Master.

DECEMBER 27.—**Stockport.**—FIRE-ESCAPE STAIRS.—Provision and erection of two iron fire-escape stairs at the Workhouse, Shaw Heath, Stockport. Specification, with sketch of staircases, together with tender therefor. Further particulars may be obtained on application to the Workhouse Master between 9 a.m. and 12 noon.

DECEMBER 29.—**Belfast.**—MACHINERY.—The Belfast Harbour Commissioners invite tenders for the construction, delivery, and erection of hydraulic engines and machinery for the hauling backwards and forwards of the travelling caisson at the entrance to their new graving dock. Outline, specification, and form of tender, etc., may be obtained from the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E.

JANUARY 11.—**New South Wales.**—POWER GENERATING STATION EQUIPMENT.—The Representative of the Commonwealth of Australia, 72, Victoria-street, Westminster, S.W., is prepared to receive tenders for the supply, delivery, c.i.f. Sydney, and erection (at the Lithgow Small Arms Factory, New South Wales, Australia) of a power generating station equipment. Form of tender, etc., may be obtained on application at the Commonwealth Office.

FEBRUARY 2.—**Melbourne, Australia.**—ELECTRICALLY-DRIVEN PUMP.—Tenders are invited for the supply of one electrically-driven pump. Specification, plans, etc., can be obtained on application to Messrs. McIlwraith, McEacharn, & Co., Ppty., Ltd., Agents for the Melbourne City Council, Billiter-square-buildings, London, E.C. Application must be accompanied by a deposit of 1*l.* 1s.

MARCH 9.—**Adelaide.**—DREDGER.—Tenders will be received at the office of the Engineer-in-Chief, Adelaide, South Australia, for the construction and delivery of one cutter and suction dredger. Specifications, etc., can be obtained at the office of the South Australian Government, 85, Gracechurch-street, London, E.C.

NO DATE.—**Pontefract.**—BOREHOLES.—Pontefract Corporation invite tenders for clearing out and deepening the existing boreholes in their Roall Well, and for putting down further boreholes to augment the existing supply. Further particulars from the engineers, Messrs. G. & F. W. Hodson, M.Inst.C.E., Bank-chambers, Loughborough.

NO DATE.—**Quebec.**—BRIDGE WORKS.—Tenders for superstructure, Quebec Bridge. Contractors for bridge superstructure are invited to visit the office of the Board of Engineers, in the Canadian Express Building, Montreal, Canada, where information may be had to enable them to prepare bids for the superstructure of 1,758-ft. span bridge, 88 ft. in width. Mr. L. K. Jones, Secretary, Department of Railways and Canals, Ottawa.

MISCELLANEOUS.

DECEMBER 20.—**Aston, etc.**—FURNITURE.—West Riding C.C. Education Department invite tenders for furniture required for Aughton new Provided School, Aston; Pontefract-road new Provided School, Castleford; and Darton new Provided School. Full particulars may be obtained from the Education Department (Elementary Branch), County Hall, Wakefield.

DECEMBER 20.—**New Brighton.**—DEMOLITION OF PROPERTY.—The U.D.C. of Wallasey invite offers for the purchase, taking down, and removal of twenty dwelling-houses, Higher-parade, New Brighton, and a number of lock-up shops in front of same. Forms of tender, etc., may be obtained on application to Mr. W. H. Travers, A.M.Inst.C.E., Public Offices, Egremont, Cheshire.

DECEMBER 22.—**Audlem.**—SCAVENGING.—Nantwich R.D.C. invite tenders for emptying pails containing nightsoil and to empty ashpits, and also to properly empty privies and ashpits. Further particulars may be obtained from the Council's Inspector, Mr. John Storey, at his office in Pillory-street, Nantwich.

DECEMBER 23.—**Chatham.**—ELECTRIC LAMPS.—The T.C. invite tenders for the supply of "Osram" electric lamps. Full particulars, etc., can be obtained at the Borough Surveyor's office, Town Hall, Chatham.

DECEMBER 29.—**Bromley.**—FURNITURE, ETC.—Kent Education Committee invite tenders for the supply of furniture and fittings for the Science-room at Bromley County School. Forms and specification may be obtained on application to the Stores Superintendent, Kent Education Committee, Caxton House, Westminster, S.W.

DECEMBER 30.—**Devonport.**—STEEL SHELVING.—Steel shelving in the strong-room at the Borough Treasurer's office, St. Aubyn-street, Devonport. Plans, etc., may be seen, and forms of tender obtained, at the Surveyor's office, Municipal Offices, 29, Ker-street, Devonport.

DECEMBER 31.—**Trowbridge.**—STEAM ROLLING.—Wilts C.C. Roads and Bridges Committee invite tenders for steam rolling on 316 miles of main road. Specifications, etc., can be obtained from the County Surveyor.

NO DATE.—**Birmingham.**—PULLING DOWN, ETC.—Pulling down and removing old buildings adjoining the Theatre Royal, New-street, for the Provincial Cinematograph Theatres Company, Ltd. Particulars may be obtained at the offices of Messrs. Nicol & Nicol, architects, 117, Colmore-row.

NO DATE.—**West Tanfield.**—WORK TO BELLS.—The Churchwardens of West Tanfield invite specification and tenders for overhauling and putting in working order the peal of six bells. Apply Churchwardens, West Tanfield.

PAINTING, etc.

DECEMBER 20.—**Carlisle.**—PAINTING.—Carlisle Board of Guardians invite tenders for painting the outside wood and iron work at Fusehill Workhouse and Hospital, etc., and Harraby Hill House, Carlisle. Specifications, etc., can be obtained from Mr. George Armstrong, architect, 24, Bank-street.

DECEMBER 20.—**Sheffield.**—PAINTING.—The Mappin Art Gallery of the City Council is prepared to receive tenders for internal and external painting at the Mappin Art Gallery, Weston Park. Conditions of contract may be seen, and specification, etc., obtained, on application to the City Architect, Town Hall, Sheffield.

DECEMBER 21.—**Aberbargoed.**—PAPERING, ETC.—Certain work, including papering and painting, at the Travellers' Rest and cottages adjoining, at Aberbargoed, for Messrs. A. Buchan & Co., The Brewery, Rhymney. Plans, etc., may be seen either at the Travellers' Rest or at office of Mr. T. Roderick, architect, Clifton-street, Aberdare.

DECEMBER 21.—**Pembroke.**—PAINTING.—Pembroke U.D.C. invite tenders for painting the gates and railings of the following:—Herbert Park, Ringsend Park, Sandymount Green. Specification can be seen at Town Hall, Ballsbridge, Pembroke, Co. Dublin.

DECEMBER 22.—**Harrogate.**—COLOURING, ETC.—The Committee of Management of the Royal Bath Hospital and Rawson Convalescent Home, Harrogate, invite tenders for colouring, painting, whitewashing, etc. Mr. B. Shaw, Secretary.

DECEMBER 31.—**Birmingham.**—PAINTING.—The Guardians invite tenders for interior cleaning, painting, and distempering the woodwork and ironwork, etc., of Relief Department of the Parish Offices, Edmund-street. Specification can be seen, and particulars obtained, from the architect, Mr. W. H. Ward, Paradise-street, Birmingham.

ROADS, SANITARY, AND WATER WORKS.

DECEMBER 19—**Dover.**—CHURCH-ROAD IMPROVEMENT.—The T.C. invite tenders for completing the construction of Church-road, Maxton, Dover. Forms of tender, specification, etc., may be obtained on payment of 2*l.* 2s., and conditions and plans inspected, at the office of the Borough Engineer, Mr. W. C. Hawke, A.M.Inst.C.E., Maison Dieu House, Biggin-street, Dover.

DECEMBER 20.—**Litherland.**—PAVING, ETC.—The U.D.C. of Litherland invite tenders for paving, etc., works. Plans, etc., can be seen, and quantities and form of tender obtained, on application to Mr. A. H. Carter, Surveyor, Public Offices, Sefton-road, Litherland, on payment of the sum of 10s. 6d.

DECEMBER 20.—**Manchester.**—DRAINING, ETC.—The Paving, Sewering, and Highways Committee of the Manchester Corporation invite tenders for the draining and paving of Silton-street, from Ashley-lane to Benton-street, Moston, North Manchester. Forms of tender may be obtained on application to the Paving, etc., Department (Surveyor's office), where plan and section of the said works may be seen.

DECEMBER 20.—**Plymouth.**—MAKING-UP.—Making-up and completing Knighton-road-lane South, No. 2. Plans, etc., at office of Mr. James Paton, Borough Engineer, Municipal Offices, Plymouth.

DECEMBER 20.—**Porthcawl.**—WATER MAIN.—Porthcawl U.D.C. invite tenders for the provision and laying of a 3-in. diameter cast-iron water main in Fenton-place, of a length of 176 yds. or thereabouts, and other work. Plans may be seen, and specification, etc., obtained, on application to Mr. Arthur S. Lilley, A.Inst.C.M.E., Engineer and Surveyor, Council Offices, Porthcawl, on payment of the sum of 1*l.* 1s.

DECEMBER 21.—**Braintree.**—WATER MAINS.—Braintree U.D.C. invite tenders for providing and laying about 270 yds. 3-in. cast-iron water mains, with other contingent work. Specifications can be seen, and form of tender obtained, on application to Mr. H. H. Nankivell, Surveyor's office, Vestry Hall, Braintree.

* DECEMBER 21.—**Harlesden.**—ROAD-MAKING, ETC.—The Willesden U.D.C. invite tenders for the execution of certain road-making and paving works. See advertisement in this issue for further particulars.

DECEMBER 21.—**Highsted.**—ROADWAY.—Milton R.D.C. invite tenders for the construction of a new roadway at Winding-hill, Highsted. The plans, etc., can be inspected, and all particulars obtained from Mr. E. C. Pearcy, Surveyor, 45, High-street, Sittingbourne.

DECEMBER 21.—**Leigh-on-Sea.**—STREET WORKS.—Making-up and completion of streets for the U.D.C. Plans, etc., may be seen at the office of the surveyor, Mr. John W. Liversedge, A.M.Inst.C.E., from whom bill of quantities, etc., may be obtained on payment of a deposit of 2*l.* 2s. for each copy.

DECEMBER 21.—**Liversedge.**—STREET WORKS.—Sewering, kerbing, flagging, channelling, macadamising, and making good of Queen-street, Marsh, for the U.D.C. Plans, etc., may be seen, and bill of quantities obtained, from Mr. F. Langley, Engineer and Surveyor, Council Offices, Liversedge, upon deposit of 1*l.* 1s.

DECEMBER 21.—**Sandown.**—SEWERAGE WORKS.—Sandown U.D.C. invite tenders for the construction and completion of works of sewerage. Plans, etc., may be seen, and full particulars obtained, on inquiry at the office of the Surveyor to the Council at the Town Hall, Sandown.

DECEMBER 21.—**Tynemouth.**—STREET WORKS.—Tenders are invited for the following street works:—(1) Laying whinstone chip paving and forming concrete dwarf retaining wall in Chirton West View, etc.; (2) laying tar macadam and forming concrete dwarf retaining wall in Collingwood View, etc.; (3) laying whinstone chip paving in lanes behind Sandringham-gardens, etc. Plans, etc., may be seen at the office of Mr. John F. Smillie, Borough Surveyor.

DECEMBER 22.—**Ashby St. Ledgers.**—CARRIAGE DRIVE.—Construction of a new carriage drive at Ashby St. Ledgers. Specifications, etc., may be obtained, and plans may be seen, at the Estate Office, Ashby St. Ledgers, on payment of a deposit of 2*l.* 2s.

DECEMBER 22.—**Gosforth.**—FOOTWAY CONSTRUCTION.—Gosforth U.D.C. invite tenders for footway construction. All particulars may be obtained from Mr. George Nelson, A.M.Inst.C.E., Engineer and Surveyor to Council, Council Chambers, High-street, Gosforth.

DECEMBER 22.—**Willenhall.**—ROAD WORKS.—Willenhall U.D.C. invite tenders for the sewering, levelling, metalling, paving, kerbing, channelling, and making generally of a street leading from Birmingham-street to Gipsy-lane, and known as Mount Pleasant. Drawings, etc., are to be seen, and bill of quantities, etc., obtained, on deposit of 1*l.*, at the office of Mr. T. Edgar Fellows, C.E., Engineer and Surveyor to the Council, Town Hall, Willenhall.

DECEMBER 23.—**Oldham.**—SEWERING, PAVING, ETC.—The Surveyors Committee invite tenders for sewering, paving, flagging, and completing of roads and streets. Plans, etc., can be seen, and quantities obtained, at the office of the Borough Surveyor.

DECEMBER 23.—**Twineham, Cuckfield.**—WATER MAIN.—The R.D.C. of Cuckfield invite tenders for the laying of about 4,900 yds. of 3-in. cast-iron water main, with valves, hydrants, etc., and the building of a meter pit. Plans may be inspected, and copies of the specification, etc., obtained, on application to Mr. J. Johnston, Engineer, 12, Bond-street, Brighton.

DECEMBER 24.—**Cowley.**—SEWER.—Uxbridge R.D.C. invite tenders for the laying of a 9-in. stoneware sewer in Station-road, Cowley. Plan, etc., can be seen, and copies of specification obtained, at the office of Mr. John William Harrison, Engineer and Surveyor to the Council, Corn Exchange, Uxbridge, on the payment of a deposit of 1*l.* 1s.

DECEMBER 27.—**Keynsham.**—DRAINAGE.—The Guardians of the Keynsham Union invite tenders for drainage works at the Keynsham Workhouse. Plans, etc., may be inspected, and form of tender obtained, at office of Mr. Henry M. Bennett, Old Bank-chambers, 36, Corn-street, Bristol.

DECEMBER 28.—**Filton.**—SEWERAGE WORKS.—Chipping Sodbury R.D.C. invite tenders for the construction of a system of sewerage for the Parish of Filton, in accordance with the plans, etc., prepared by their engineers, Messrs. A. P. I. Cotterell & Carr, of 26, Victoria-street, Westminster, and 28, Baldwin-street, Bristol. Plans may be seen at the offices of the engineers, Bristol. Copies of the specification, etc., may be obtained from the engineers on payment of the sum of 3*l.* 3s.

DECEMBER 28.—**Neath.**—ROAD WORKS.—Tenders are invited for the widening and improvement of Neath Abbey-road and incidental works. Drawings, etc., may be seen at the office of the Borough Engineer, Mr. D. M. Jenkins, Glyn Hall, Neath, where also a copy of the bill of quantities and form of tender may be obtained on payment of a deposit of 1*l.* 1s.

DECEMBER 28.—**West Hartlepool.**—STREET WORKS.—The Corporation invite tenders for the construction of portions of Oakley-gardens and Harte-street. Plans, etc., can be seen, and forms of tender, etc., obtained, upon application at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings.

DECEMBER 29.—**Burslem.**—MAKING-UP.—The Corporation invite tenders for the making-up of Riley-street North. Plan, etc., can be seen, and quantities obtained, at the Borough Surveyor's Office, Queen-street, on payment of 2*l.* 2s.

DECEMBER 30.—**Friern Barnet.**—KERBING.—Kerbing, channelling, making-up, etc., of Oakleigh Park North and Torrington Park (part of), for the U.D.C. Forms of tender, etc., can be obtained from Mr. E. J. Reynolds, A.M.Inst.C.E., the Council's Engineer and Surveyor.

DECEMBER 30.—**Pembroke.**—WATER MAINS.—The U.D.C. invite tenders for the supply and laying complete of water mains. General conditions, etc., can be obtained at office of Mr. J. C. Manly, Clerk to the Council, Town Hall, Ball's Bridge, Pembroke, Co. Dublin.

DECEMBER 31.—**Bradford.**—ESHOLT SEWAGE DISPOSAL WORKS.—Excavation of 40,000 cubic yds. of material (or thereabouts), the formation of embankments, and the construction of masonry walls and foundations at Strangford-hill, on the Esholt Estate. Copies of the specification, etc., may be obtained, and the drawings seen, at the office of Mr. Joseph Garfield, A.M.Inst.C.E., Esholt Hall, Shipley (station, Apperley Bridge, Midland Railway), on the payment of the sum of 3*l.* 3s.

DECEMBER 31.—**Sketty.**—SEWAGE WORKS.—Swansea R.D.C. invite separate tenders for (1) the providing, laying, and jointing of about five miles of 7-in., 8-in., 9-in., and 12-in. diameter sewers, etc.; (2) the supply of materials and construction of sewage tanks, bacteria beds, etc.; (3) the supply of all materials, the laying of all sewers, and the construction of all the works mentioned above. Drawings may be seen, and conditions of contract, etc., obtained, at the offices of the Engineer, Mr. T. Trevor Williams, D.C. Offices, Alexandra-road, Swansea, on payment of a deposit of 4*l.* 4s.

JANUARY 4.—**Croydon.**—PRIVATE STREET WORKS.—Repair of Everton-road. Plans, etc., may be seen, and forms of tender obtained, on application at the Borough Road Surveyor's office, Town Hall, Croydon.

JANUARY 5.—**Exminster.**—SEWERAGE WORKS.—The R.D.C. of St. Thomas invite tenders for the construction of about 1,340 yds. of 7-in. and 8-in. earthenware pipe sewers; also about 1,322 yds. of iron pipe sewers, ranging from 6 in. to 8 in., and

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

the laying out of a sewage irrigation area and other works. Specification and plans prepared by Mr. Sidney R. Lowcock, M.Inst.C.E. Drawings may be inspected, and copies of the specification, etc., obtained, on application at the office of the Engineer, 50, Queen Anne's-gate, Westminster, S.W., or at office of Mr. Arthur E. Ward, Clerk to the Council, St. Thomas R.D.C. Offices, 9, Bedford-circus, Exeter, on payment of a cheque for 5*l.*

JANUARY 5. — **Wembley.** — MAKING-UP.—Wembley U.D.C. invite tenders for the making-up of district and central roads. The drawings, etc., may be seen at the office of Mr. Cecil R. W. Chapman, the Surveyor to the Council, at the Public Offices, Wembley. Copies of the quantities, with forms of tenders attached, may be obtained at office of Mr. Fredk. W. Rodd, Clerk to the Council, Public Offices, Wembley, upon payment of a deposit of 3*l.* 3s. in each case.

JANUARY 7. — **Sheffield.** — SEWERS, ETC.—Sheffield Highways and Sewerage Committee invite tenders for the construction of (1) a brick sewer; (2) crossing under the Great Central Railway; (3) crossing over the Blackburn Brook and construction of storm-water overflow chamber; (4) widening part of Meadowhall-road and construction of retaining wall; (5) junction chamber, Meadowhall-road; (6) crossing under River Don; (7) syphoning of Bagley Brook under sewer; (8) reconstruction of certain storm-water overflow chambers. Drawings may be seen, and conditions of contract, etc., obtained, on application to the City Engineer, Town Hall, Sheffield, upon payment of the sum of 1*l.*

JANUARY 10.—**Woking.**—DRAINAGE.—The U.D.C. of Woking invite tenders for the construction of about one mile of 24-in. concrete tube sewers, and about the same quantity of stoneware pipe sewers, together with manholes and gullies. Drawings, etc., at the offices of Mr. G. J. Wooldridge, the Engineer to the Council, Council Offices, Woking. Copy of the specification, etc., may be obtained from the Engineer on payment of 5*l.*

STONES, MATERIAL, AND STORES.

DECEMBER 20.—**Belfast.**—CASTINGS AND WROUGHT-IRON WORK.—The Tramways and Electricity Committee invite tenders for bases, collars, finials, and brackets of tramway poles, and will consider separate tenders for either castings or wrought-iron work. Specification (No. I. 9), with form of tender, etc., may be obtained from Mr. Thomas W. Bloxam, M.Inst.E.E., City Electrical Engineer, Corporation Electricity Works, East Bridge-street, Belfast, on making a deposit of 1*l.* 1s.

DECEMBER 20.—**Stockport.**—PIPES, ETC.—The Waterworks Committee invite tenders for (1) 4,200 tons cast-iron pipes and specials; (2) 121 sluice valves; (3) 50 tons pig lead. Forms of tender, etc., may be obtained from Mr. T. Molyneux, A.M.Inst.C.E., Waterworks Engineer, Town Hall, Stockport.

DECEMBER 20.—**Tynemouth.**—RUBBLE.—Tenders are invited for the supply of about 700 tons of rubble suitable for street penning. Mr. John F. Smillie, Borough Surveyor.

DECEMBER 20. — **Tynemouth.** — WHINSTONE PAVING CHIPS.—Tenders are invited for the supply of 200 tons or more of Whinstone paving chips. Further particulars upon application to Mr. John F. Smillie, Borough Surveyor.

DECEMBER 21. — **Brentford.** — FLINTS.—The U.D.C. invite tenders for the supply of 250 yds. of Kentish pit flints. Forms of tender, together with specification, may be obtained on application to Mr. J. W. Croxford, the surveyor, at his office, Clifden House, Boston-road, Brentford.

DECEMBER 21. — **London.** — ROLLING STOCK. — The South Indian Railway Company, Ltd., invite tenders for the supply of (1) rolling stock; (2) locomotive stores. Specifications, etc., may be obtained at the company's offices, 91, York-street, Westminster, S.W. A charge, which will not be returned, will be made of 20s. for each copy of specification No. 1, and 10s. for each copy of No. 2. Copies of the drawings may be obtained at the office of Mr. Robert White, M.Inst.C.E., Consulting Engineer to the Company, 3, Victoria-street, Westminster, London, S.W., on the payment of 5s. per sheet.

DECEMBER 22.—**Ipswich.**—GRANITE.—The Guardians invite tenders for the supply of a steamer cargo of granite, which is required at the Workhouse, Woodbridge-road. Mr. L. W. Greenhalgh, Clerk to the Guardians, Guardians' Offices, 19, Tower-street, Ipswich.

DECEMBER 23. — **Cuckfield.**—CAST-IRON PIPES.—The R.D.C. of Cuckfield invite tenders for the supply of about 78 tons of 3-in. cast-iron pipes, etc. The specification, etc., may be obtained on application to Mr. J. Johnston, engineer, 12, Bond-street, Brighton.

DECEMBER 23.—**Nottingham.**—LIGHTING REQUISITES. —The Lighting Committee invite tenders for the supply of requisites during the year 1910. Further particulars and forms of tender may be obtained from Mr. Carter, Lighting Inspector, St. John's-street.

DECEMBER 24. — **Edinburgh.** — STORES. — Northern Lighthouses Commissioners invite tenders for the supply of stores for the year 1910. Printed forms may be obtained from the Superintendent, 84, George-street, Edinburgh.

DECEMBER 24.—**Garforth.**—COLLIERY STORES.—The owners of Garforth Colliery invite tenders for iron, steel, iron and steel castings, nails, timber, oils, etc. Forms of tender may be obtained on application to the owners of Garforth Colliery, near Leeds.

DECEMBER 28. — **Bootle.** — GRANITE KERBS AND CHANNELS.—The Corporation of Bootle invite tenders for the supply of granite kerbs and channels. Forms of tender may be obtained at the office of Mr. B. J. Wolfenden, A.M.Inst.C.E., Borough Engineer, Town Hall.

DECEMBER 28.—**Elgin.**—ROAD METAL FOR THE YEAR 1910-1911.—Specifications and schedules of quantities, with forms of offers, may be had on application to Mr. Alexander Hogg, County Road Surveyor, 24, Academy-street, Elgin.

DECEMBER 29. — **Burnley.** — RAILS.—Supply of 150 tons of 6½-in. girder tram rails B.S.S., with the necessary fishplates. Names and addresses to Mr. G. H. Pickles, M.Inst.C.E., Borough Engineer, Town Hall, Burnley.

DECEMBER 31.—**Douglas, Isle of Man.**—STORES.—The Stores Committee of the Douglas Corporation invite quotations for the supply of sundry stores for the general department requirements during the ensuing twelve months. Schedules of quantities, etc., will be sent to firms on contractors' list. Firms not receiving same, and being desirous of tendering, can have their names placed on the list of contractors, and schedules forwarded, on application to the Borough Surveyor, Douglas.

DECEMBER 31.—**Trowbridge.**—ROAD METAL.—Wilts C.C. Roads and Bridges Committee invite tenders for the supply of road metal. Forms of tender to be obtained of the County Surveyor, Trowbridge.

JANUARY 1.—**Abercarn.**—STORES.—Abercarn U.D.C. invite tenders for gas, water, and general stores, including gas and water tubing, cast-iron mains, etc. Schedules of stores may be had upon application to the Council's Engineer, at his office at Abercarn, Mon.

JANUARY 3. — **Dublin.** — RAILS. — Midland Great Western Railway (of Ireland) Company Directors invite tenders for the supply of the following materials:—1,500 tons steel flat-bottom rails, and 100 tons steel fishplates, in accordance with specification, which can be obtained on application to the Chief Engineer of the Company, Broadstone Terminus, Dublin. A charge of 2s. 6d. will be made for the specification for rails and fishplates, which is not returnable.

JANUARY 17. — **Chislehurst.** — CONTRACTS.—Chislehurst U.D.C. invite tenders for annual contracts. Particulars, etc., may be obtained on application being made at Council Offices, Chislehurst.

JANUARY 17.—**Croydon.**—DRAIN PIPES, STORES, AND ROAD MATERIALS.—Samples of the stores required for the Roads Department may be seen at the Corporation Roads Depôt, Factory-lane, and tender forms obtained at the Borough Road Surveyor's office, Town Hall, Croydon. Samples of the stores required for the Sanitary and Waterworks Departments may be seen at the Waterworks Stores at Surrey-street, Croydon, and tender forms obtained at the Borough Engineer's office, Town Hall, Croydon.

✱ JANUARY 24.—**Poplar.**—WORKS AND MATERIALS.—The Poplar B.C. invite tenders for certain works and supply of materials. See advertisement in this issue for further particulars.

Auction Sale.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*WOODWORKING PLANT AND MACHINERY—On the Premises	J. T. Skelding & Holland	Jan. 6

PUBLISHER'S NOTICES.

Nat. Tel., 6112 Gerrard. Telegrams, "The Builder, London."

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 6s. 0d.
Each additional line..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under..... 4s. 6d.
Each additional line (about ten words)..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under..... 2s. 6d.
Each additional line (about ten words)..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

. Stamps *must not* be sent; but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office*, 4, Catherine Street, Strand, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed), 1s.

PRICES CURRENT OF MATERIALS.

. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.		
Best Stocks	1	8	0	per 1000	alongside, in river.
Picked Stocks for Facings	2	10	0	,,	delivered
Flettons.....	1	6	0	,,	at railway depôt.
Best Fareham Red	3	12	0	,,	,, ,,
Best Red Pressed Ruabon Facing..	5	0	0	,,	,, ,,
Best Blue Pressed Staffordshire ...	3	15	0	,,	,, ,,
Do. Bullnose	4	0	0	,,	,, ,,
Best Stourbridge Fire Bricks	3	14	0	,,	,, ,,
GLAZED BRICKS.					
Best White and Ivory Glazed Stretchers.....	10	17	6	,,	,, ,,
Headers	10	7	6	,,	,, ,,
Quoins, Bullnose, and Flats	14	7	6	,,	,, ,,
Double Stretchers	16	7	6	,,	,, ,,
Double Headers...	13	7	6	,,	,, ,,
One Side and two Ends	17	7	6	,,	,, ,,
Two Sides and one End.....	18	7	6	,,	,, ,,
Splays and Squints	15	17	6	,,	,, ,,
Best Dipped Salt Glazed Stretchers	10	17	6	,,	,, ,,
Headers.....	10	7	6	,,	,, ,,
Quoins, Bullnose, and Flats	14	7	6		
Double Stretchers	16	7	6	,,	,, ,,
Double Headers...	13	7	6	,,	,, ,,
One Side and two Ends	17	7	6	,,	,, ,,
Two Sides and one End.....	18	7	6	,,	,, ,,
Splays and Squints	15	17	6	,,	,, ,,

BRICKS, &c. (*continued*).

	£	s.	d.		
Second Quality White and Dipped Salt Glazed	1	5	0	per 1000	less than best.
		s.	d.		
Thames and Pit Sand		6	6	per yard,	delivered.
Thames Ballast		5	0	,,	,,
Best Portland Cement.....	28	0		per ton,	,,
Best Ground Blue Lias Lime	19	0		,,	,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.		
BATH STONE—delivered on road waggons, Paddington Depôt.....	1	6½	per ft. cube.	
Do. do. delivered on road waggons, Nine Elms Depôt.....	1	8½	,,	,,
PORTLAND STONE (20 ft. average)—				
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	,,	,,
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	,,	,,
	s.	d.		
Ancaster in blocks	1	10	per ft. cube,	deld. rly. dep.
Beer ,, ...	1	6	,,	,,
Greenshill ,, ...	1	10	,,	,,
Darley Dale in blocks ...	2	4	,,	,,
Red Corsehill ,, ...	2	2	,,	,,
Closeburn Red Freestone	2	0	,,	,,
Red Mansfield ,,	2	4	,,	,,
YORK STONE—*Robin Hood Quality.*				
	s.	d.		
Scappled random blocks.	2	10	per ft. cube,	deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.).....	2	3	per ft. super.	,,
6 in. rubbed two sides ditto, ditto	2	6	,,	,,
3 in. sawn two sides slabs (random sizes)	0	11½	,,	,,
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	,,	,,
1½ in. to 2 in. ditto, ditto	0	6	,,	,,

STONE (*continued*).

YORK STONE—*Robin Hood Quality (continued)*—

	s.	d.	
Scappled random blocks.	3	0	per ft. cube deld rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12 " "	13	17	6	" "
20×10 first quality "	13	0	0	" "
20×12 " "	13	15	0	" "
16×8 " "	7	5	0	" "
22×10 best blue Portmadoc	12	12	6	" "
16×8 " "	6	12	6	" "
20×10 best Eureka unfading green	15	17	6	" "
20×12 " "	18	7	6	" "
18×10 " "	13	5	0	" "
16×8 " "	10	5	0	" "
20×10 permanent green	11	12	6	" "
18×10 " "	9	12	6	" "
16×8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000 at rly. dep.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles	48	0	per 1000 "
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14	0	0	15	10	0
Deals: best 3 by 9	13	10	0	14	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in.	9	10	0	10	10	0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	10	0	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¼ in.	1	0	0	"		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 5	0	0	5	10	0
Seconds	4	10	0	5	0	0
Small timber (8 in. to 10 in.)	3	17	6	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	3	10	0
Swedish balks	2	12	6	3	0	0
Pitch-pine timber (30 ft. average)	4	10	0	5	5	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	10	0	25	10	0
3 in. by 9 in.	22	10	0	23	10	0
Battens 2½ in. and 3 in. by 7 in.	17	0	0	18	0	0
Second yellow deals, 3 in. by 11 in.	19	0	0	20	0	0
3 in. by 9 in.	18	0	0	19	10	0
Battens, 2½ in. and 3 in. by 7 in.	14	0	0	15	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	14	0	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	10	0	12	10	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	10	0	22	10	0
Do. 3 in. by 9 in.	18	10	0	19	10	0
Battens	14	0	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	10	0	17	10	0
Do. 3 in. by 9 in.	15	0	0	16	0	0
Battens	11	10	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	10	0	14	10	0
Do. 3 in. by 9 in.	13	0	0	14	0	0
Battens	10	10	0	11	0	0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	15	0	0	16	0	0
" " 3 in. by 9 in.	14	0	0	14	10	0
Battens	11	10	0	12	10	0
Second white deals, 3 in. by 11 in.	14	0	0	15	0	0
" " 3 in. by 9 in.	13	0	0	14	0	0
Battens	10	10	0	11	0	0
Pitch-pine: deals	19	0	0	21	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes	33	0	0	"		
Oddments	28	0	0	"		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak logs— Large, per ft. cube	0	3	0	0	3	9
Small " "	0	2	6	0	2	6

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	At per standard. £	s.	d.	£	s.	d.
Wainscot Oak Logs, per ft. cube	0	5	6	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	0	0	9½
¼ in. do. do	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	10	0	1	1
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0
Teak per load	18	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0
Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¼ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. " "	0	14	0	0	18	0
¼ in. by 7 in. white " "	0	10	0	0	11	6
1 in. by 7 in. " "	0	12	9	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	7	10	0
Compound Girders, ordinary sections	9	0	0	10	0	0
Steel Compound Stanchions	11	0	0	12	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	10	0	0
Flitch Plates	9	0	0	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	8	10	0

METALS.

	Per ton, in London. £	s.	d.	£	s.	d.
IRON— Common Bars	8	10	0	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	9	5	0
Staffordshire "Marked Bars"	10	10	0	—		
Mild Steel Bars	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
" " Galvanised	17	0	0	—		

(*And upwards, according to size and gauge.)

Sheet Iron, Black— Ordinary sizes to 20 g.	9	15	0	—		
" " 24 g.	10	15	0	—		
" " 26 g.	12	5	0	—		
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0	—		
Ordinary sizes to 22 g. and 24 g.	15	10	0	—		
" " 26 g.	16	10	0	—		
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	18	0	0	—		
" " 22 g. and 24 g.	18	10	0	—		
" " 26 g.	20	0	0	—		
Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	—		
" " 22 g. and 24 g.	14	15	0	—		
" " 26 g.	16	5	0	—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	0	0	—		
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	—		
" " 26 g.	15	0	0	—		
Cut Nails, 3 in. to 6 in.	10	10	0	11	0	0

(Under 3 in., usual trade extras.)

LEAD, &c.	Per ton, in London. £	s.	d.	
LEAD—Sheet, English, 3lb. and up.	16	10	0	—
Pipe in coils	17	0	0	—
Soil pipe	20	0	0	—
Compo pipe	20	0	0	—
ZINC—Sheet— Vielle Montagne	28	5	0	—
Silesian	27	17	6	—
COPPER— Strong sheet per lb.	0	1	0	—
Thin "	0	1	1	—
Copper nails "	0	0	10	—
Copper wire "	0	0	10	—
BRASS— Strong Sheet "	0	0	11	—
Thin "	0	1	0	—
TIN—English Ingots "	0	1	4½	—
SOLDER—Plumbers' "	0	0	6½	—
Tinmen's "	0	0	9	—
Blowpipe "	0	0	11	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d " "
" fourths	4½d. " "
Fluted Sheet, 15 oz	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2½d. per ft. delivered.
⅛ "	2⅝d. " "
¼ "	2⅞d. " "
Figured, Oxford Rolled and Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.

		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	2	7
" " in barrels	"	0	2	8
" " in drums	"	0	2	11
Boiled " in barrels	"	0	2	11
" " in drums	"	0	3	2
Turpentine in barrels	"	0	3	3
" in drums	"	0	3	5
Genuine Ground English White Lead	per ton	20	10	0
Red Lead, Dry	"	19	10	0
Best Linseed Oil Putty	per cwt.	0	7	6
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.

	Per gallon. £	s.	d.
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	10	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

*** Owing to the Christmas holidays, the *Builder* will be published next week on Thursday instead of Friday. All communications for the Editor must therefore reach our office by first post on Wednesday morning.

* Denotes *accepted*. † Denotes *provisionally accepted*.

BUXTED (Sussex).—For alterations and additions to Buxted Park, for the Hon. H. B. Portman. Mr. F. W. Foster, architect, 26, Bedford-row, W.C.:—

A. Chilton, Uckfield* £928

CARDIFF.—For new juniors' building, North Edward-street, for the Y.M.C.A. Messrs. Speir & Beavan, architects, Borough-chambers, Wharton-street, Cardiff:—

James & Norris	£4,500 0 0	D. Davis & Sons	£4,038 0 0
E. D. W. Evans	4,360 13 6	Knox & Wells	3,993 0 0
J. T. Howells	4,360 0 0	J. Allan & Co.	3,922 0 0
Stephens & Co.	4,329 0 0	Tucker Bros.	3,917 8 1
R. E. F. Haynes	4,250 0 0	Gough Bros.	3,880 0 0
Griffin & Sons	4,238 17 6	W. T. Symonds	3,850 0 0
Blacker Bros.	4,179 0 0	E. Turner & Sons*	3,798 0 0
W. Thomas & Co.	4,073 0 0	W. T. Morgan	3,697 0 0
E. R. Evans & Bros.	4,049 0 0		

EPSOM.—For 1,400 yds. of cast-iron watermain and twelve specials, for the Urban District Council:—

Staveley Coal and Iron Co., Ltd., Chesterfield*—Pipes £5 1s. 8d. per ton; specials, £9 10s. per ton.

FINCHLEY.—For iron fencing for Regent's Park-road, for the Urban District Council:—

J. Elwell, Birmingham, for supplying railing fixed and varnished, 4s. 10d. per yard; for Portland cement concrete, 10s. per cubic yard.

GREAT YARMOUTH.—For rebuilding north wing of front, for "Palmers." Messrs. Geo. Baines & Son, 5, Clement's Inn, London, W.C., and A. S. Hewitt, Bank-chambers, Great Yarmouth, joint architects:—

—	Amount of Estimate No. 1.	Amount of Estimate No. 2 (reduction for one month extra time).	Total.
C. W. Wiseman	£3,740 0	£200 0	£3,540 0
G. E. Hawes & Sons	2,989 0	15 0	2 974 0
J. Leggett	2 775 0	—	2,775 0
Carter & Wright	2,749 17	60 0	2,689 17
J. Youngs & Son	2,745 0	86 0	2,659 0
J. Eustoe*	2,797 0	145 0	2,652 0

GRIMSBY.—For Humberstone sewage works, for the Rural District Council. Mr. A. Hobson, Surveyor, 198, Legsby-avenue, Grimsby:—

Hewins & Goodhand	£995 12	Brumby, Robinson, & Son	£659 0
R. C. Brebner & Co.	798 15	J. Sangwin, Hull, and 403, Victoria-street, Grimsby*	608 0
H. W. Parker & Son	797 10	A. M. Macdonald	418 8
T. B. Wickstead & Co.	722 0		
A. E. Jenkinson	711 0		
J. C. Allison	707 0		

HARROGATE.—For private street improvement works in King Edward's-drive, for the Corporation. Mr. F. Bagshaw, Borough Engineer and Surveyor Harrogate:—

C. A. Nettleton, Skipton-road, Harrogate* £746 2 6

HULL.—For erecting a school in Sidmouth-street, for the Education Committee. Mr. J. H. Hirst, City Architect, Town Hall, Hull. Quantities by Mr. John Watson Hull:—

Jackson & Sons	£20,107 8 3	W. Sanderson	£18,279 0 0
P. T. Kettlewell	19,888 0 0	Quibell, Son, & Greenwood	18,052 0 0
G. Houlton & Son	18,600 0 0	J. H. Fenwick	18,030 0 0
T. Goates & Son	18,450 0 0	M. Harper	17,929 5 0
J. T. Levitt	18,350 0 0	G. H. Panton, Anlaby-road*	17,489 0 0

LONDON.—For additions and alterations to No. 15, Mansfield-street, W., for the Countess Pappenheim. Mr. F. W. Foster, architect, 26, Bedford-row, W.C.:—
Foxley & Co..... £1,416 | J. Kirkby £1,286

LONDON.—For erecting an iron fire-escape staircase at workhouse in Woodfield-road, Harrow-road, W., for Paddington Guardians. Mr. E. Howley Sim, architect, Mowbray House, Norfolk-street, Strand, W.C.:—

G. Aston & Sons, Ltd.	£252 0 0
Bromsgrove Guild of Applied Arts	165 15 0
Mackenzie & Moncur, Ltd.	153 10 0
A. Ritchie & Co., Ltd.	149 15 6
H. & S. Jones	139 18 0
G. Wright, Ltd.	130 0 0
W. Wallis, Ltd.	129 0 0
Jones & Co.	126 15 0
Falkirk Iron Co.	125 19 6
Lion Foundry Co., Ltd.	122 16 0
Cadogan Iron Works	120 0 0
G. P. Banbury	114 19 0
Barrett & Power	112 0 0
Haward Bros., Ltd.	102 5 0
Hayward Bros. & Eckstein, Ltd.	99 17 6
Herring & Son, Ltd.	99 17 6
General Iron Foundry Co., Ltd., 43, Upper Thames-street, E.C.*	99 10 0

LONDON.—For extension of the chief station of the fire brigade, for the London County Council:—

Leslie & Co., Ltd.	£18,059	Holloway Bros. (London), Ltd.	£17,290
W. Johnson & Co., Ltd.	17,990	J. Mowlem & Co. Ltd.	17,150
Higgs & Hill, Ltd.	17,934	H. L. Holloway	17,067
Foster & Dicksee	17,777	J. Carmichael	17,047
Holland & Hannen	17,500	Kirk & Randall	16,866
G. Trollope & Sons, & Colls & Sons, Ltd.	17,484	Kerridge & Shaw, 28, Sturton-street, Cambridge*	16,861

[The Architect's revised estimate of the cost of the work is £17,550.]

LONDON.—For a new school for the accommodation of 500 children, to be erected on the Sherington-road site, Greenwich, for the London County Council:—

G. Parker & Sons	£15,630	T. D. Leng	£14,150
W. Downs	14,655	J. & C. Bowyer, Ltd.	14,096
Treasure & Son, Ltd.	14,649	Kirk & Randall	13,985
F. & T. Thorne	14,343	Thomas & Edge	13,896
J. Marsland & Sons	14,319	J. Smith & Sons (Norwood), Ltd.	13,858
H. L. Holloway	14,282	W. Johnson & Co., Ltd., Wandsworth-common‡	13,212
Perry & Co. (Bow), Ltd.	14,275		
W. Akers & Co., Ltd.	14,228		
F. & H. F. Higgs	14,219		

‡ Recommended for acceptance.
[The estimate of the Architect (Education), comparable with the tenders, is £14,456.]

LONDON.—For additions and alterations to No. 36, Belgrave-square, S.W. Mr. F. W. Foster, architect, 26, Bedford-row, W.C. Quantities by Mr. L. H. G. Stanbrough, 26, Bedford-row:—

Prestige & Co.	£5,693	Foxley & Co.	£5,464
Whitty Bros.	5,620	Allen & Co*	4,978
F. G. Minter	5,532		

LONDON.—For additions and alterations to No. 16, Grosvenor-street, W., for the Hon. Mrs. George Keppel. Mr. F. W. Foster, architect, 26, Bedford-row, W.C. Quantities by Mr. L. H. G. Stanbrough, 26, Bedford-row:—

H. Hanks	£8,790	Allen & Co.	£7,750
Perry & Co.	8,233	F. G. Minter	7,278
Prestige & Co.	8,150	J. C. Carmichael	7,195

MIDDLESBROUGH.—For the erection and completion of new public library in Dunning-street, Middlesbrough, for the Corporation. Messrs. Russell & Cooper, architects, 11, Gray's Inn-square, London. Quantities by Messrs. Watson & Webster, 10, Gray's Inn-square, W.C.:—

G. Radge	£14,130 0 0	T. Lumsden	£12,232 0 0
E. F. Davidson & Miller	13,279 0 0	Quibell, Son, & Greenwood	11,857 9 0
W. Nicholson & Son, Ltd.	13,133 1 9	Allison Bros.	11,799 11 6
D. Doughty & Sons	13,035 0 0	H. Arnold & Son	11,766 0 0
J. Howe & Co.	12,875 0 0	P. Rhodes	11,597 0 0
R. Wilson	12,694 1 1	H. McNaughton, Middlesbrough*	11,566 8 0
Hudson Bros.	12,550 0 0		
S. Coates, Ltd.	1,2435 13 2		

NEWPORT (Mon.).—For private street works in Oswald-road and Kingsmill-lane, for the Corporation. Mr. R. H. Haynes, Borough Engineer. Quantities by Surveyor:—
G. T. Leadbeter, Chepstow-road* £89 10
G. Vincent, Glebe-street* 44 0
[Both of Newport.]

NUTLEY.—Additions to Old Lodge, Nutley, Sussex. Mr. F. W. Foster, architect, 26, Bedford-row:—
W. Gadley* £3,200

PINNER.—For the erection of two pairs of semi-detached houses in West End-avenue, Pinner, Middlesex. Mr. J. E. Henderson, architect:—
Milsom & Booth* £2,210

RAMSEY (Hunts).—For erecting a Council school, Mereside, for the Hunts Education Committee. Quantities by Mr. Herbert Leete, County Surveyor, Huntingdon:—

J. Cracknell	£2,193 0 0	F. B. Thackeray & Co., Ltd.	£1,828 10 0
Hawkins & Son	2,040 0 0	F. Giddings	1,786 0 0
W. Alcock	1,983 10 0	Rose & Sons	1,776 13 9
J. Saint & Sons	1,897 16 0	D. Gray	1,755 0 0
J. Bridgefoot & Son	1,890 0 0	R. Shanks	1,730 0 0
G. Page & Son	1,880 0 0	J. Guttridge & Sons, Peterborough*	1,719 0 0
J. Allen & Sons	1,860 0 0		

SAFFRON WALDEN. — For erecting a public swimming bath in Hill-street, for the Borough Council. Mr. A. H. Forbes, Borough Surveyor, Saffron Walden:—

G. Wyatt	£1,550 0	Green & Parsons	£1,331 12
F. B. Thackeray & Co.	1,488 0	J. L. Glasscock & Son, Bishop's Stortford*	1,290 0
J. Custerson	1,365 0		

SOPWORTH (Wilts).—For additions and alterations to the Rectory, for Captain the Hon. Cyril Ward. Mr. F. W. Foster, architect, 26, Bedford-row, W.C. Quantities by Mr. L. H. G. Stanbrough, 26, Bedford-row, W.C.:—

Allen & Co.	£8,217	J. Freeman	£7,350
C. Trask & Sons	7,998	Orchard & Peer	7,290
Foxley & Co.	7,984		

TIPTON.—For erecting a caretaker's house and outbuildings on land adjoining the public offices, for the Urban District Council. Mr. W. H. Jukes, Engineer and Surveyor, Public Offices, Tipton:—

F. L. Jones	£296 0	A. J. Crump	£225 0
W. A. Kendrick	245 0	J. Edwards, Dudley‡	219 10
H. Smart	235 0		
J. Sisman	235 0		

‡ Recommended for acceptance.
[Surveyor's estimate, £224 10s. 7d.]

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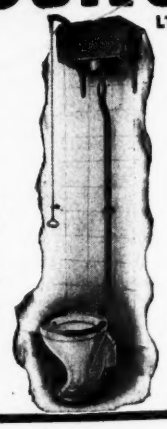

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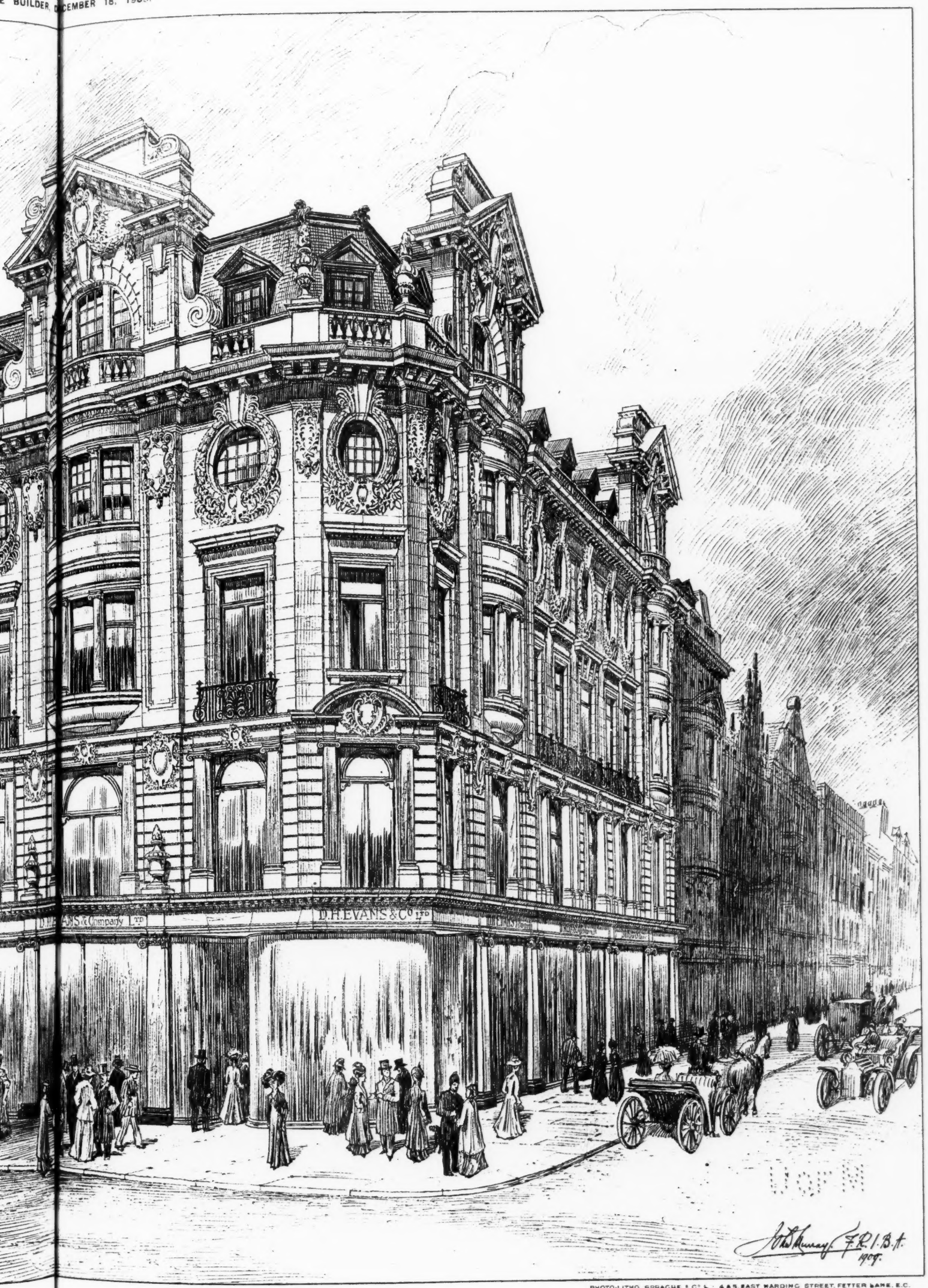

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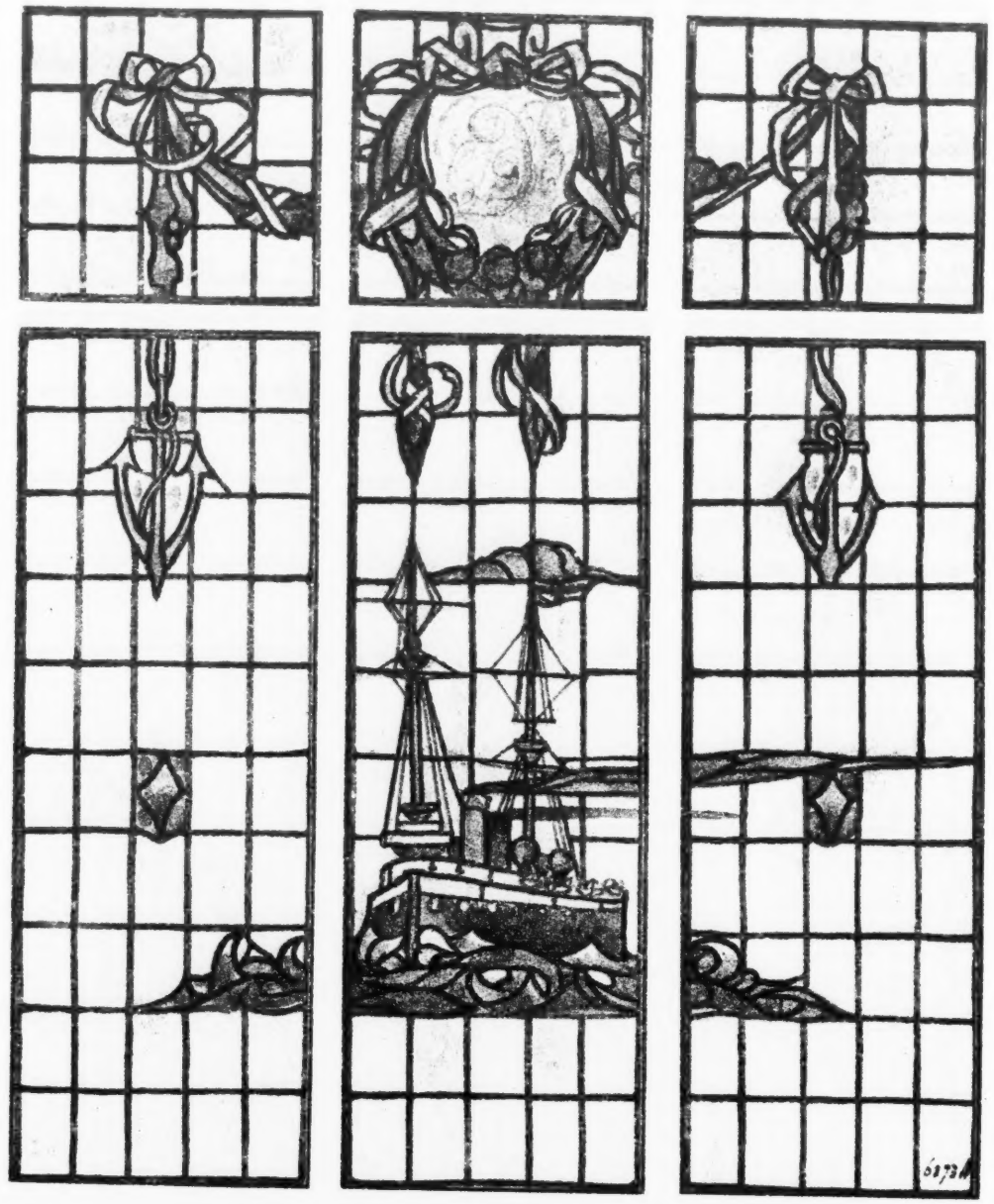
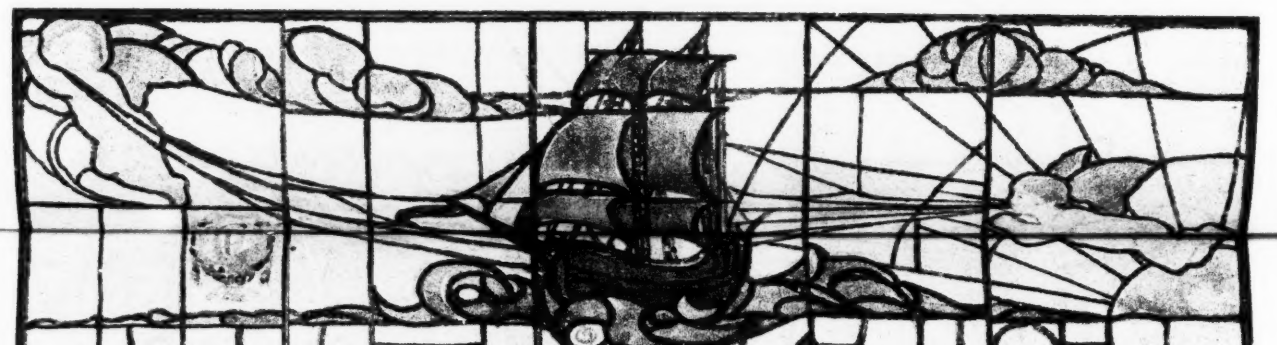
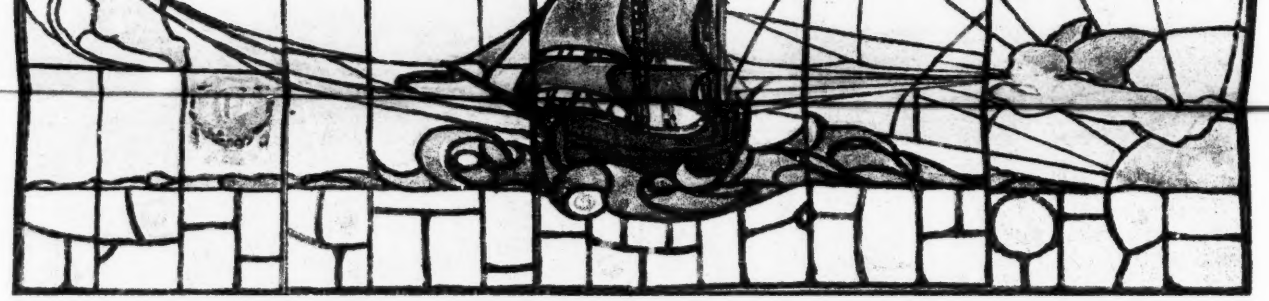
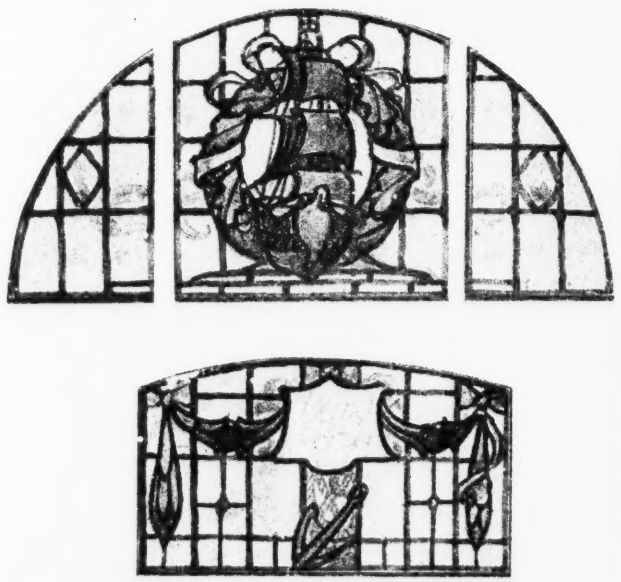
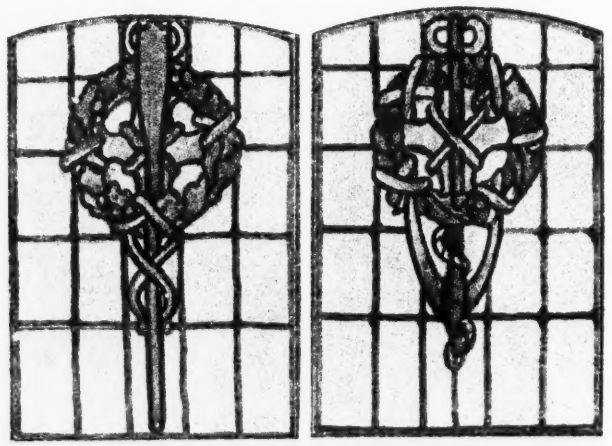
OXFORD STREET.—Mr. John Murray, F.R.I.B.A., Architect.

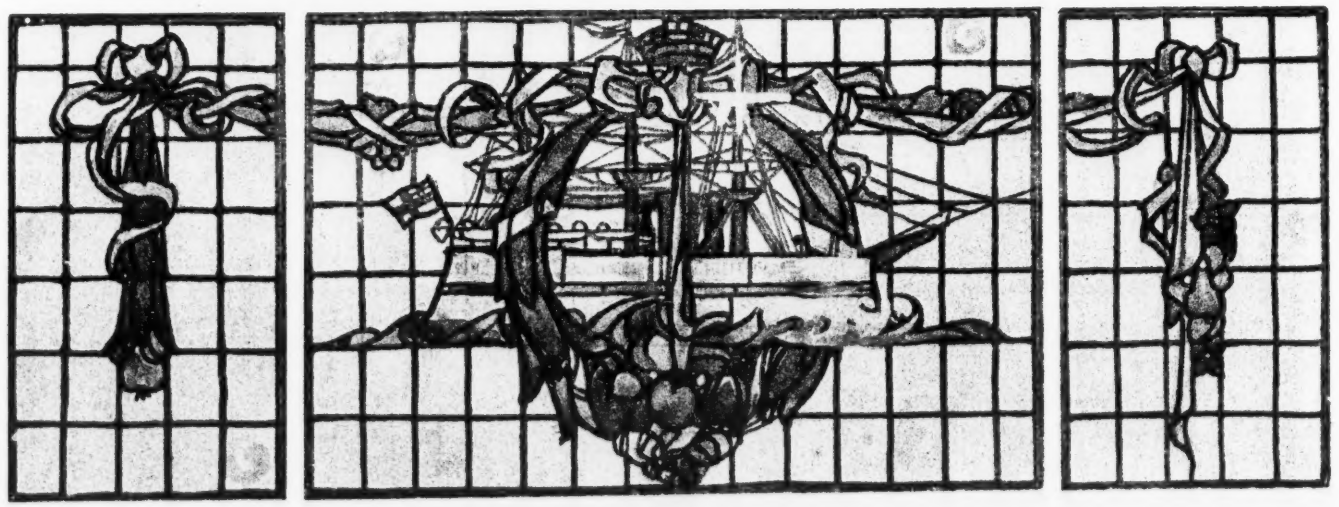












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